Response: Property will remain industrial and added note to the plat as El Paso County Note No. 13, as requested.

Where the Property is Adjacent to an Industrial Area:
NOTICE: This property may be adversely impacted by noise, dust, fumes, and light pollution caused by adjacent industrial properties and activities. The buyer should research and be aware of this potentiality and the ramifications thereof. (Use when residential is adjacent to industrial)

Where the Property is Located in the Airport Overlay Zone
NOTICE OF POTENTIAL AIRCRAFT OVERFLIGHT AND NOISE IMPACT ASSOCIATED WITH AIRPORT: This serves as notice of potential aircraft overflight and noise impacts on this property due to its close proximity to an airport, which is being disclosed to all prospective purchasers considering the use of this property for residential and other purposes. This property is subject to the overflight and associated noise of arriving and departing aircraft during the course of normal airport operations. (Use when this plat is to provide the notice)
All property within this subdivision is subject to a Notice of Potential Aircraft Overflight and Noise Impact recorded at Reception No. _____, of the records of the El Paso County Clerk and Recorder. (Use when the Notice has previously been recorded)
All property within this subdivision is subject to an Avigation Easement as recorded at Reception No. _____, of the records of the El Paso County Clerk and Recorder. (Use only when the property is subject to an existing avigation easement as reflected in the title policy)

Response: Added first note to the plat as a stand alone note, since the property appears to have no recorded avigation easement reflected in the title commitment or on the prior plat, as requested.

Public and Common Subdivision Improvements:
No lot or interest therein, shall be sold, conveyed, or transferred whether by deed or by contract, nor shall building permits be issued, until and unless either the required public and common development improvements have been constructed and completed and preliminarily accepted in accordance with the Subdivision Improvements Agreement between the applicant/owner and El Paso County as recorded under Reception Number _____ in the Office of the Clerk and Recorder of El Paso County, Colorado or, in the alternative, other collateral is provided to make provision for the completion of said improvements in accordance with the El Paso County Land Development Code and Engineering Criteria Manual. Any such alternative collateral must be approved by the Board of County Commissioners or, if permitted by the Subdivision Improvements Agreement, by the Planning and Community Development Department Director and meet the policy and procedure requirements of El Paso County prior to the release by the County of any lots for sale, conveyance or transfer.
This plat restriction may be removed or rescinded by the Board of County Commissioners or, if permitted by the Subdivision Improvements Agreement, by the Planning and Community Development Department Director upon either approval of an alternative form of collateral or completion and preliminary acceptance by the El Paso Board of County Commissioners of all improvements required to be constructed and completed in accordance with said Subdivision Improvements Agreement. The partial release of lots for sale, conveyance or transfer may only be granted in accordance with any planned partial release of lots authorized by the Subdivision Improvements Agreement.

Response: Added to the plat as El Paso County Note No. 1, as requested.

Environmental:
Developer shall comply with federal and state laws, regulations, ordinances, review and permit requirements, and other agency requirements, if any, of applicable agencies including, but not limited to, the Colorado Division of Wildlife, Colorado Department of Transportation, U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service regarding the Endangered Species Act, particularly as it relates to the listed species (e.g., Preble's Meadow Jumping Mouse).

Response: Added to the plat as El Paso County Note No. 2, as requested.

# SPACE VILLAGE FILING NO. 4

## 1/2 OF SECTION 17, TOWNSHIP 14 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN, IN THE COUNTY OF EL PASO, STATE OF COLORADO

SHEET 1 OF 2

## BE IT KNOWN BY THESE PRESENTS:

THAT FIRST WING DEVELOPMENT, LLLP, A COLORADO LIMITED LIABILITY LIMITED PARTNERSHIP, BEING THE OWNER OF THE FOLLOWING DESCRIBED TRACT OF LAND, TO WIT:

## DESCRIPTION:

A PARCEL OF LAND BEING A PORTION OF THE NORTHWEST QUARTER OF SECTION 17, TOWNSHIP 14 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF EL PASO, STATE OF COLORADO, BEING DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEASTERLY CORNER OF LOT 1 AS PLATTED IN COWPERWOOD SAIC, AS RECORDED UNDER RECEPTION NO. 205122346, RECORDS OF EL PASO COUNTY, COLORADO, SAID POINT BEING ON THE SOUTHERLY RIGHT-OF-WAY LINE OF SPACE VILLAGE AVENUE, SAID POINT ALSO BEING THE POINT OF BEGINNING; THENCE S89°53'54"E ON SAID SOUTHERLY RIGHT-OF-WAY LINE, A DISTANCE OF 1327.50 FEET TO A POINT ON THE EAST LINE OF THE NORTHWEST QUARTER OF SECTION 17, TOWNSHIP 14 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN, EL PASO COUNTY, COLORADO; THENCE S00°12'31"E ON SAID EAST LINE, A DISTANCE OF 757.08 FEET; THENCE S89°56'31"W, A DISTANCE OF 1289.94 FEET TO THE SOUTHEASTERLY CORNER OF SAID LOT 1; THENCE N03°02'00"W ON THE EASTERLY BOUNDARY LINE OF SAID LOT 1, A DISTANCE OF 761.80 FEET TO THE POINT OF BEGINNING.

CONTAINING 994,018 SQUARE FEET OR 22.820 ACRES, MORE OR LESS.

## DEDICATION:

THE UNDERSIGNED OWNER HAS CAUSED SAID TRACT OF LAND TO BE PLATTED INTO LOTS AND PUBLIC EASEMENTS AS SHOWN ON THE PLAT. THE UNDERSIGNED DOES HEREBY DEDICATE, GRANT AND CONVEY TO THE CITY OF COLORADO SPRINGS THOSE PUBLIC EASEMENTS AS SHOWN ON THE PLAT; AND FURTHER RESTRICTS THE USE OF ALL PUBLIC EASEMENTS TO THE CITY OF COLORADO SPRING AND/OR ITS ASSIGNS. PROVIDED HOWEVER, THAT THE SOLE RIGHT AND AUTHORITY TO VACATE, RELEASE OR QUITCLAIM ALL OR ANY SUCH PUBLIC EASEMENTS SHALL REMAIN EXCLUSIVELY VESTED IN THE CITY OF COLORADO SPRINGS. THIS TRACT OF LAND AS PLATTED HEREIN SHALL BE KNOWN AS **"SPACE VILLAGE FILING NO. 4"**, IN THE CITY OF COLORADO SPRINGS, EL PASO COUNTY, STATE OF COLORADO.

**OWNER:** FIRST WING DEVELOPMENT, LLLP, A COLORADO LIMITED LIABILITY LIMITED PARTNERSHIP, HAS EXECUTED THIS INSTRUMENT ON THIS DAY ___ OF _____, 2022, A.D.

BY: _____

PRINT NAME: _____

AS: _____ OF FIRST WING DEVELOPMENT, LLLP, COLORADO LIMITED LIABILITY LIMITED PARTNERSHIP.

## NOTARY:

STATE OF _____ )
)SS.
COUNTY OF _____ )

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS ____ DAY OF _____, 2022, BY _____ AS _____ FOR FIRST WING DEVELOPMENT, LLLP, A COLORADO LIMITED LIABILITY LIMITED PARTNERSHIP.

WITNESS MY HAND AND OFFICIAL SEAL.

MY COMMISSION EXPIRES:_____

_____
NOTARY PUBLIC

VICINITY MAP

## GENERAL NOTES:

1. BEARINGS SHOWN HEREON ARE BASED UPON THE NORTHERLY LINE OF THE NORTHWEST 1/4 OF SECTION 17, TOWNSHIP 14 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN, PER THE PLAT OF COWPERWOOD SAIC RECORDED AUGUST 9, 2005 AT RECEPTION NO. 205122346 IN THE OFFICE OF THE CLERK AND RECORDER FOR THE COUNTY OF EL PASO, STATE OF COLORADO, WHICH BEARS SOUTH 89°53'54" EAST BETWEEN THE MONUMENTS SHOWN AND DESCRIBED HEREON.
2. THE DATE OF PREPARATION IS MAY 23, 2022.
3. FLOODPLAIN STATEMENT: THIS PROPERTY IS LOCATED WITHIN ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN) AS ESTABLISHED BY FEMA PER FIRM PANEL 08041C0754G, EFFECTIVE DATE DECEMBER 7, 2018.
4. ANY PERSON WHO KNOWINGLY REMOVES, ALTERS OR DEFACES ANY PUBLIC LAND SURVEY MONUMENT OF LAND MONUMENT OR ACCESSORY, COMMITS A CLASS TWO (2) MISDEMEANOR PURSUANT TO STATE STATUE 18-4-508, C.R.S.
5. NO BUILDING PERMITS SHALL BE ISSUED FOR BUILDING SITES WITHIN THIS PLAT UNTIL ALL REQUIRED FEES HAVE BEEN PAID AND ALL REQUIRED PUBLIC AND PRIVATE IMPROVEMENTS HAVE BEEN INSTALLED AS SPECIFIED BY THE CITY OF COLORADO SPRINGS OR ALTERNATIVELY UNTIL ACCEPTABLE ASSURANCES INCLUDING BUT NOT LIMITED TO LETTERS OF CREDIT, CASH, SUBDIVISION BONDS OR COMBINATIONS THEREOF GUARANTEEING THE COMPLETION OF ALL REQUIRED PUBLIC IMPROVEMENTS INCLUDING, BUT NOT LIMITED TO, DRAINAGE, STREET AND EROSION CONTROL HAVE BEEN PLACED ON FILE WITH THE CITY OF COLORADO SPRINGS.
6. THIS PLAT DOES NOT CONSTITUTE A TITLE SEARCH BY ALTURA LAND CONSULTANTS, LLC, TO DETERMINE OWNERSHIP OR EASEMENTS OF RECORD, FOR ALL INFORMATION REGARDING EASEMENTS, RIGHTS-OF-WAY, TITLE AND OTHER MATTERS OF RECORD, ALTURA LAND CONSULTANTS RELIED ON TITLE COMMITMENT ORDER NO. SC55101684 AS PREPARED BY LAND TITLE GUARANTEE COMPANY AND DATED NOVEMBER 16, 2021.
7. BOUNDARY CORNER MONUMENTATION IS SET NAIL AND DISK OR #5 REBAR W/GREEN PLASTIC CAP "PLS 38081" FLUSH WITH THE GROUND AT ALL CORNERS, UNLESS SHOWN OTHERWISE.
8. LINEAL UNITS USED FOR THIS SURVEY AS U.S. SURVEY FEET.
9. EASEMENTS DEDICATED PER THIS PLAT ARE AS SHOWN, WITH THE SOLE RESPONSIBILITY FOR MAINTENANCE BEING VESTED WITH THE PROPERTY OWNER.

## EASEMENTS:

EASEMENTS DEDICATED PER THIS PLAT ARE AS SHOWN, WITH THE SOLE RESPONSIBILITY FOR MAINTENANCE BEING VESTED WITH THE PROPERTY OWNER.

## SURVEYING STATEMENT:

THE UNDERSIGNED PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF COLORADO, HEREBY STATES AND DECLARES THAT THE ACCOMPANYING PLAT WAS SURVEYED AND DRAWN UNDER HIS RESPONSIBLE CHARGE AND ACCURATELY SHOWS THE DESCRIBED TRACT OF LAND, AND SUBDIVISION THEREOF, AND THAT THE REQUIREMENTS OF TITLE 38 OF THE COLORADO REVISED STATUTES, 1973, AS AMENDED, HAVE BEEN MET TO THE BEST OF HIS KNOWLEDGE AND BELIEF AND IS NOT A GUARANTEE OR WARRANTY EITHER EXPRESSED OR IMPLIED.

_____
JESUS A. LUGO, PLS 38081
COLORADO LICENSED PROFESSIONAL LAND SURVEYOR
FOR AND ON BEHALF OF ALTURA LAND CONSULTANTS, LLC

NOTICE: ACCORDING TO COLORADO LAW, YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.

## BOARD OF COUNTY COMMISSIONERS CERTIFICATE:

THIS PLAT FOR SPACE VILLAGE FILING NO. 4 WAS APPROVED FOR FILING BY THE EL PASO COUNTY, COLORADO BOARD OF COUNTY COMMISSIONERS ON THE ___ DAY OF _____, 2022, SUBJECT TO ANY NOTES SPECIFIED HEREON AND ANY CONDITIONS INCLUDED IN THE RESOLUTION OF APPROVAL. THE DEDICATIONS OF LAND TO THE PUBLIC (EASEMENTS) ARE ACCEPTED.

_____ _____
CHAIR, BOARD OF COUNTY COMMISSIONERS DATE

_____ _____
DIRECTOR, PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT DATE

## CLERK AND RECORDER:

STATE OF COLORADO )
) SS
COUNTY OF EL PASO )

I HEREBY CERTIFY THAT THIS INSTRUMENT WAS FILED FOR RECORD IN MY OFFICE AT_____ O'CLOCK____M.
THIS ___ DAY OF _____, 2022, A.D., AND IS DULY RECORDED AT RECEPTION NO. _____
OF THE RECORDS OF EL PASO COUNTY, COLORADO

CHUCK BROERMAN, RECORDER

BY: _____
DEPUTY

FEE: _____ SURCHARGE: _____

## FEES

SCHOOL FEE: _____

BRIDGE FEE: _____

PARK FEE: _____

DRAINAGE FEE: _____

Response: Added owner information to the plat in the lower right hand corner, as requested.

Name, address and telephone number of the owner of record located in the lower right hand corner,

Response: Added the surveyor information to the plat in the lower right hand corner, as requested.

Names, address, and telephone number of person(s) responsible for preparing the plat (e.g., licensed surveyor, licensed engineer or designer of the plat) located in the lower right hand corner


ALTURA LAND CONSULTANTS
6551 South Revere Parkway, Suite 165
Centennial, Colorado 80111 Phone: (720) 488-1308


| NO. | DATE: | REVISION DESCRIPTION: | BY: |
|---|---|---|---|
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| | | | |
| | | | |

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|---|---|
| DATE: | MAY 23, 2022 |
| DRN BY: | KJS |
| JOB NO. | 22032 |
| SHEET | 1 OF 2 |

Addresses:
The addresses exhibited on this plat are for informational purposes only. They are not the legal description and are subject to change.

Response: Added to the plat as El Paso County Note No. 3, as requested.

Note Regarding Reports on File:
The following reports have been submitted in association with this subdivision and are on file at the County Planning and Community Development Department: Transportation Impact Study; Drainage Report; Water Resources Report; Wastewater Disposal Report; Geology and Soils Report; Fire Protection Report; Wildfire Hazard Report; Natural Features Report; (other; modify based upon specific reports)

Response: Added to the plat as El Paso County Note No. 4, as requested.

Cherokee Plat Note Re: Basin Transfer/Insufficiency:
Water and wastewater services for this subdivision are provided by the Cherokee Metropolitan District (Cherokee) subject to the District's rules, regulations and specifications. The Office of the State Engineer has issued an opinion of water inadequacy based on its analysis and interpretation of a stipulated agreement concerning the availability of certain water rights for use outside of the Upper Black Squirrel Creek Designated Basin, and thus found insufficiency of water resources for this subdivision based on that agreement. This interpretation differs from certain opinions issued by the Office in the past. Based on its own review of the stipulated agreement and its history (and not the amount of water actually available) the Board of County Commissioners in an open and public hearing did not accept the interpretation of the State Engineer's Office. The Board of County Commissioners found that Cherokee has committed to provide water service to the subdivision and asserted that its long term water service capabilities are sufficient. The Board of County Commissioners made this determination in reliance upon the testimony and expertise provided by Cherokee at the public hearing thereon. At the hearing, Cherokee asserted that its plans and continued financial investment in infrastructure are designed to allow Cherokee to continue to provide this subdivision and its existing customers with water and wastewater services for 300 years or more.

Response: Added to the plat as El Paso County Note No. 5, as requested.

Please add the following plat notes:- All property owners are responsible for maintaining proper storm water drainage in and through their property. Public drainage easements as specifically noted on the plat shall be maintained by the individual lot owners unless otherwise indicated. Structures, fences, materials or landscaping that could impede the flow of runoff shall not be placed in drainage easements- Easements:Unless otherwise indicated, all side, front, and rear lot lines are hereby platted on either side with a 10 foot public utility and drainage easement unless otherwise indicated. All exterior subdivision boundaries are hereby platted with a 20 foot public utility and drainage easement. The sole responsibility for maintenance of these easements is hereby vested with the individual property owners.- No driveway shall be established unless an access permit has been granted by El Paso County.- Mailboxes shall be installed in accordance with all El Paso County and United States Postal Service regulations.

Response: Added to the plat as El Paso County Note Nos. 7, 8, 9 & 10, as requested.

-Lot 1 and 2 of this property is subject to a Private Detention Basin / Stormwater Quality BMP Maintenance Agreement and Easement ("Agreement") as recorded at Reception Number _____ of the records of El Paso County.

- The subdivider agrees on behalf of him/herself and any developer or builder successors and assignees that subdivider and/or said successors and assigns shall be required to pay traffic impact fees in accordance with the El Paso County road impact fee program resolution (resolution No. 19-471), or any amendments thereto, at or prior to the time of building permit submittal.

Response: Added to the plat as El Paso County Note Nos. 11 & 12, as requested.

include: The final total gross acreage, the total number of lots, gross density, net density and net acreage of the subdivision.

Response: Added Lot Summary Table, as requested.

Drainage:
The individual lot purchaser(s) shall be responsible for final design, construction, and maintenance of private detention pond/water quality BMP(s) as described in the approved Preliminary/Final Drainage Report for this subdivision. Final design, construction drawings and drainage report updates for the detention pond/water quality BMP(s) serving each lot shall be provided with Site Development Plan submittals. The detention pond/water quality BMP(s) shall be constructed and completed prior to the issuance of any building permits for the subject lots. The subdivision developer is responsible for providing financial assurances as indicated in the Subdivision Improvements Agreement and Estimate of Guaranteed Funds for all detention ponds/water quality BMPs. All detention ponds/water quality BMPs shall be constructed prior to the release of said financial assurances.
Individual lot purchasers shall enter into a Private Detention Basin / Stormwater Quality BMP Maintenance Agreement and Easement ("Agreement") prior to the issuance of any building permits for the subject lots. In the case that the developer constructs the detention pond(s), the developer shall enter into an Agreement for each pond constructed.

Response: Added to the plat as El Paso County Note No. 6, as requested.

Response: Added the filing no. to the plat, as requested.

Please add "PCD Filing No. MS-22-007".

# SPACE VILLAGE FILING NO. 4

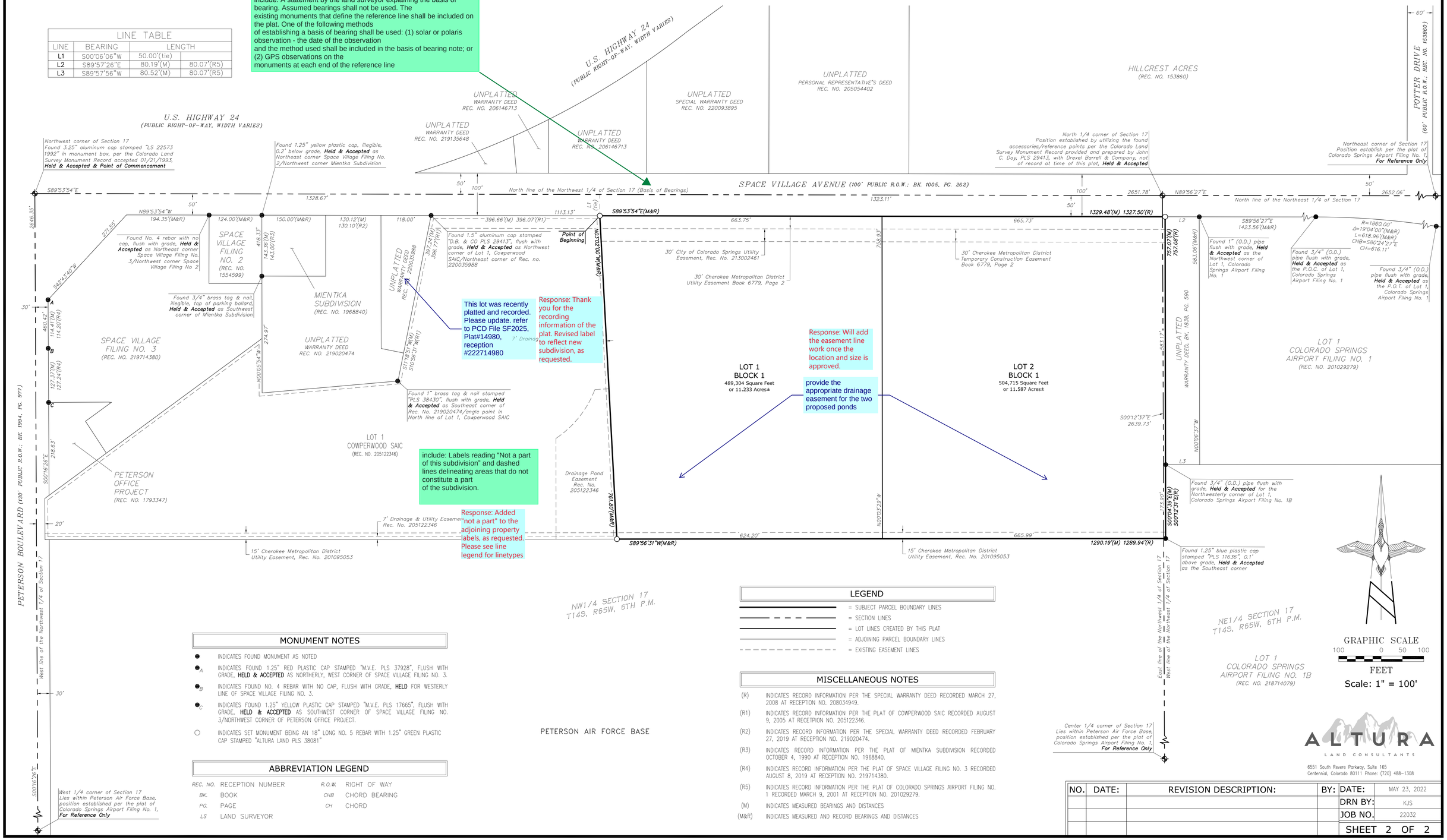
## A PORTION OF THE NORTH 1/2 OF SECTION 17, TOWNSHIP 14 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN, IN THE COUNTY OF EL PASO, STATE OF COLORADO

SHEET 2 OF 2

Response: Please see General Note No. 1 for Basis of Bearings Statement.

include: A statement by the land surveyor explaining the basis of bearing. Assumed bearings shall not be used. The existing monuments that define the reference line shall be included on the plat. One of the following methods of establishing a basis of bearing shall be used: (1) solar or polaris observation - the date of the observation and the method used shall be included in the basis of bearing note; or (2) GPS observations on the monuments at each end of the reference line

| LINE TABLE | | | |
|---|---|---|---|
| LINE | BEARING | LENGTH | |
| L1 | S00°06'06"W | 50.00'(tie) | |
| L2 | S89°57'26"E | 80.19'(M) | 80.07'(R5) |
| L3 | S89°57'56"W | 80.52'(M) | 80.07'(R5) |




### MONUMENT NOTES

- ● INDICATES FOUND MONUMENT AS NOTED
- ●A INDICATES FOUND 1.25" RED PLASTIC CAP STAMPED "M.V.E. PLS 37928", FLUSH WITH GRADE, **HELD & ACCEPTED** AS NORTHERLY, WEST CORNER OF SPACE VILLAGE FILING NO. 3.
- ●B INDICATES FOUND NO. 4 REBAR WITH NO CAP, FLUSH WITH GRADE, **HELD** FOR WESTERLY LINE OF SPACE VILLAGE FILING NO. 3.
- ●C INDICATES FOUND 1.25" YELLOW PLASTIC CAP STAMPED "M.V.E. PLS 17665", FLUSH WITH GRADE, **HELD & ACCEPTED** AS SOUTHWEST CORNER OF SPACE VILLAGE FILING NO. 3/NORTHWEST CORNER OF PETERSON OFFICE PROJECT.
- ○ INDICATES SET MONUMENT BEING AN 18" LONG NO. 5 REBAR WITH 1.25" GREEN PLASTIC CAP STAMPED "ALTURA LAND PLS 38081"

### ABBREVIATION LEGEND

| | | | |
|---|---|---|---|
| REC. NO. | RECEPTION NUMBER | R.O.W. | RIGHT OF WAY |
| BK. | BOOK | CHB | CHORD BEARING |
| PG. | PAGE | CH | CHORD |
| LS | LAND SURVEYOR | | |

### LEGEND

- = SUBJECT PARCEL BOUNDARY LINES
- = SECTION LINES
- = LOT LINES CREATED BY THIS PLAT
- = ADJOINING PARCEL BOUNDARY LINES
- = EXISTING EASEMENT LINES

### MISCELLANEOUS NOTES

- (R) INDICATES RECORD INFORMATION PER THE SPECIAL WARRANTY DEED RECORDED MARCH 27, 2008 AT RECEPTION NO. 208034949.
- (R1) INDICATES RECORD INFORMATION PER THE PLAT OF COWPERWOOD SAIC RECORDED AUGUST 9, 2005 AT RECETPION NO. 205122346.
- (R2) INDICATES RECORD INFORMATION PER THE SPECIAL WARRANTY DEED RECORDED FEBRUARY 27, 2019 AT RECEPTION NO. 219020474.
- (R3) INDICATES RECORD INFORMATION PER THE PLAT OF MIENTKA SUBDIVISION RECORDED OCTOBER 4, 1990 AT RECEPTION NO. 1968840.
- (R4) INDICATES RECORD INFORMATION PER THE PLAT OF SPACE VILLAGE FILING NO. 3 RECORDED AUGUST 8, 2019 AT RECEPTION NO. 219714380.
- (R5) INDICATES RECORD INFORMATION PER THE PLAT OF COLORADO SPRINGS AIRPORT FILING NO. 1 RECORDED MARCH 9, 2001 AT RECEPTION NO. 201029279.
- (M) INDICATES MEASURED BEARINGS AND DISTANCES
- (M&R) INDICATES MEASURED AND RECORD BEARINGS AND DISTANCES


ALTURA LAND CONSULTANTS
6551 South Revere Parkway, Suite 165
Centennial, Colorado 80111 Phone: (720) 488-1308


| NO. | DATE: | REVISION DESCRIPTION: | BY: |
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|---|---|
| DATE: | MAY 23, 2022 |
| DRN BY: | KJS |
| JOB NO. | 22032 |
| SHEET | 2 OF 2 |

STERLING
DESIGN ASSOCIATES
Civil Engineers | Landscape Architects

May 20, 2022

Revised

Please update - Matthew Fitzsimmons, Senior Planner

El Paso County
Planning and Community Development Department
2880 International Circle, Suite 110
Colorado Springs, CO 80910
Attn: Kylie Bagley, Planner II

RE: 0 Space Village Ave, Unincorporated El Paso County, CO

Dr. Ms. Bagley,

Revised

Thank you for the opportunity to submit the attached plans for a Minor Subdivision for the property at 0 Space Village Ave. The following is a narrative of the project and list of items included in the submittal.

Sterling Design Associates in conjunction with Commercial Building Services has prepared the attached Minor Subdivision Plat on behalf of Hampton Partners. The property is currently 22.8 Acres and Hampton Partners proposes to simply subdivide it into 2 separate lots roughly 11.4 Acres each. The property is currently zoned I-3 CAD-O, Heavy Industrial with Commercial Airport Overlay District. The use is listed as warehouse/storage. There are no proposed changes to zoning or use as the two lots will remain as outdoor storage with no buildings or structures planned.

please finish the sentence.

The site is an undeveloped lot consisting of outdoor storage use. Adjacent land uses to the site consist of CS-Commercial Service to the west, I-2 Industrial, CS Commercial Service, and RR-5 Residential to the north of Space Village Avenue, vacant land to the east which is City of Colorado Springs APD Airport Planned Development zone district, and Peterson Space Force Base directly to the south. Outdoor storage is a permitted use in this location and is compatible with the other surrounding uses.

The site's main access will be from two access points along Space Village Ave. No buildings are planned.

Revised

Landscaping for screening will be provided when improvements are proposed and specified as part of It is anticipated that screening will be required along Space Village and western boundary in conformance with the El Paso County LDC. Proposed landscaping will be comprised of a mixture of native and naturalized evergreen and deciduous plantings that will provide seasonal interest throughout the year. Native seed mix areas along the street frontage and perimeter will provide a comfortable transition from the surrounding natural landscape. A 20 foot buffer along Space Village Ave. with street trees 1 per 25' of frontage is anticipated as well as 5% of the property shall be landscaped per the discussion and notes from the Early Assistance Meeting. A temporary automatic irrigation system will be provided with highly efficient overhead rotary spray heads for establishment of the native seed areas and drip irrigation for any trees and shrubs. A 6' tall opaque fence is planned for the perimeter.

Very minimal noise or odors are anticipated as these lots are intended to be outdoor contractor storage. Limited truck activity for drop off and pick up noise may occur however not dissimilar to surrounding uses.

Criteria for Subdivision approvals are identified and addressed below:

- *The subdivision is in substantial compliance with the approved preliminary plan- Since* no development is proposed at this time and it being a minor subdivision, no preliminary plan has been prepared.
- *The subdivision is consistent with the subdivision design standards and regulations and meets all planning, engineering, and surveying requirements of the County for maps, data, surveys, analyses, studies, reports, plans, designs, documents, and other supporting materials-* The required studies, reports, plans, design, and supporting materials have been provided and the minor subdivision meets the criteria for approval.
- *A sufficient water supply has been acquired in terms of quantity, quality, and dependability for the type of subdivision proposed, as determined in accordance with the standards set forth in the water supply standards [C.R.S. §30-28-133(6)(a)] and the requirements of Chapter 8 of this Code-* Very limited to no water use is proposed. Regardless, based on the Water Resources Report provided by Cherokee Metro District there is sufficient supply, quality, and dependability for the proposed uses.
- *A public sewage disposal system has been established and, if other methods of sewage disposal are proposed, the system complies with State and local laws and regulations, [C.R.S. §30-28-133(6)(b)] and the requirements of Chapter 8 of this Code-* Existing public sewage infrastructure is available to the property in sufficient capacity. No proposed sanitary uses are proposed. revise to final drainage report
- *All areas of the proposed subdivision which may involve soil or topographical conditions presenting hazards or requiring special precautions have been identified and that the proposed subdivision is compatible with such conditions [C.R.S. §30-28-133(6)(c)]-* At this time no Geotech or Environmental Reports have been provided.
- *Adequate drainage improvements are proposed that comply with State Statute [C.R.S. §30-28-133(3)(c)(VIII)] and the requirements of this Code and the ECM-* As outlined in the Preliminary Drainage Report, adequate drainage improvements can be provided should the lots been improved in the future.
- *Legal and physical access is provided to all parcels by public rights-of-way or recorded easement, acceptable to the County in compliance with this Code and the ECM-* Both lots will have legal and physical access to Space Village Avenue.
- *Necessary services, including police and fire protection, recreation, utilities, and transportation systems, are or will be made available to serve the proposed subdivision-* This area is already serviced and it is anticipated these services are and will be available in the future.
- *The final plans provide evidence to show that the proposed methods for fire protection comply with Chapter 6 of this Code-* Cimarron Fire District expressed no concern upon contact with them. They have expressed they will review the proposal once a formal submittal to the County is processed and will confirm fire protection is provided per Chapter 6 of the El Paso County Code.
- *Off-site impacts were evaluated and related off-site improvements are roughly proportional and will mitigate the impacts of the subdivision in accordance with applicable requirements of Chapter 8-* Offsite impacts will be evaluated during formal review. Minimal if any impacts are anticipated as the site configuration and use will remain as it is currently being used.
- *Adequate public facilities or infrastructure, or cash-in-lieu, for impacts reasonably related to the proposed subdivision have been constructed or are financially guaranteed through the SIA so the impacts of the subdivision will be adequately mitigated-* The SIA will be finalized during formal review.

Revised

- *The subdivision meets other applicable sections of Chapter 6 and 8; and El Paso County, Colorado Land Development Code Rules Governing Divisions of Land – Chapter 7-Page 10 Effective 05/2016-* The minor subdivision meets the minimum criteria required.
- *The extraction of any known commercial mining deposit shall not be impeded by this subdivision [C.R.S. §§34-1-302(1), et seq.]-* This has been noted.

Per the submittal matrix outlined on the EDARP portal we have provided the following plans and documents in the attached submittal:

Revised

please update accordingly as documents such as the SWMP, SWMP checklist, GEC, Traffic memo etc. have been submitted for review.

- Application/Petition Form
- Letter of Intent
- Vicinity/Location Map
- Legal Description
- Title Commitment
- Preliminary Drainage Report
- Final Plat/Minor Subdivision Drawings
- Closure Sheet
- Water Supply Information Summary/ Water Resources Report

The following items are not included in the attached submittal:

- Adjacent Property Owner Notification-None of the previous 2 Planners stated this was required.
- Colorado Geological Receipt
- Detention Maintenance Agreement- No improvements are proposed at this time and therefore no ponds are being installed.
- Electric Provider Commitment Letter
- Financial Assurance Forms
- Fire Commitment Letter
- Fire Protection Report
- Soils & Geology Report
- Grading & Erosion Control Plan
- Mineral Rights Certification
- Natural Gas Commitment Letter
- Erosion and Stormwater Quality Control Permit (ESQCP)
- Subdivision Improvement Agreement
- Subdivision Summary Sheet
- Traffic Memo
- Wastewater Disposal Report
- Storm Water Management Plan (SWMP)
- PDB/BMP Operations & Maintenance Manual
- Grading & Erosion Control Checklist
- SWMP Checklist

many of these items were included.

Revised

Hampton Partners plans to comply with the County requirements and anticipate that once formal review begins any outstanding information will be provided. Should you have any questions, please do not hesitate to contact me at (303) 794-4727 x.205. We look forward to your feedback and working with you on this minor subdivision.

Sincerely,

Jon Spencer
Agent for Applicant

STERLING
DESIGN ASSOCIATES
Civil Engineers | Landscape Architects

October 10, 2022

Matthew Fitzsimmons
El Paso County Development Services Department
2880 International Circle, Suite 110
Colorado Springs, CO 80910-3127

RE: Space Village Road Minor Subdivision
Part N1/2 of Sec. 17, Twp. 14S, Rng. 65W, 6th P.M.
Water Division 2, District 10
CDWR Assigned Subdivision No. 30439

To Whom It May Concern:

This letter is in response to comments provided to Matthew Fitzsimmons of the El Paso County Development Services Department from Melissa A van der Poel of the Colorado Division of Water Resources, dated August 23, 2022.

1. The Division of Water Resources (DWR) comments that any "stormwater structure(s)" constructed (or modified) as a part of the development may be subject to administration by the DWR unless such structure(s) meet the requirements of a "'storm water detention and infiltration facility' as defined in section 37-92-602(8), Colorado Revised Statutes…"

   C.R.S. 37-92-602(8) indicates that a "storm water detention and infiltration facility" is a facility that…

   a. "…is operated solely for storm water management…"
   b. "Is owned or operated by a government entity or is subject to oversight by a governmental entity"
   c. "Continuously releases or infiltrates at least [97 %] of all the water from a rainfall event that is equal to or less than a [5-yr] storm within [72] hours after the end of the rainfall event"
   d. "Continuously releases or infiltrates all of the water from a rainfall event greater than a [5-yr] storm as quickly as practicable, but in all cases releases or infiltrates at least [99 %] of all the water from the rainfall event within [120] hours after the end of the rainfall event"
   e. "Operates passively and does not subject the storm water runoff to any active treatment process."

   The proposed detention and stormwater quality infiltration basins designed to serve the project site as described in the *Final Drainage Report* and in the *Grading & Erosion Control Plan*…

   a. Are intended to be operated solely for storm water management,
   b. Are intended to be owned and operated privately, but are subject to oversight by a governmental entity,

c. Continuously release or infiltrate at least 97% of all runoff from a rainfall event that is less than or equal to a 5-yr storm within 72 hours (see calculations included in the *Final Drainage Report*),
d. Continuously release or infiltrate at least 99% of all runoff from a rainfall event that is greater than a 5-yr storm within 120 hours (see calculations included in the *Final Drainage Report*), and
e. Are designed to operate passively, without subjecting the stormwater runoff to any active treatment process.

Therefore, the proposed facilities meet the state requirements of a storm water detention and infiltration facility.

2. The DWR recommends that "…notice, construction and operation of the proposed structure meets statutory and administrative requirements…" as referenced in DWR's *Administrative Statement Regarding the Management of Storm Water Detention Facilities and Post-Wildland Fire Facilities in Colorado*.

   Review of that administrative statement finds that the requirements to be considered a "Detention Facility" as defined in the statement are equivalent to those five requirements outlined above as in C.R.S. 37-92-602(8).

   In addition, the statement indicates that for a "…Detention Facility…constructed after August 5, 2015, the entity that owns, operates, or has oversight for the Detention Facility must, prior to the operation of the facility, provide notice of the proposed facility to the Substitute Water Supply Plan (SWSP) Notification List for the water division in which the facility is located…" and that "…Notice must include: the location of the proposed facility, the approximate surface area at design volume of the facility, and data that demonstrates that the facility has been designed to comply with section 37-92-602(8)(b) paragraphs (B) and (C)." The DWR statement suggests, "To satisfy the notification requirement, operators are encouraged to use the Colorado Stormwater Detention and Infiltration Facility Notification Portal developed by Urban Drainage and Flood Control District ("UDFCD")…"

   The Final Drainage Report includes such information as required for notice, including forms downloaded from the Colorado Stormwater Detention and Infiltration Facility Notification Portal. It is assumed the county will use said forms to accomplish the required notice.

3. It should be noted that the site is within the Peterson Field Drainage Basin which the *Peterson Field Drainage Basin Master Plan Update*, prepared by URS/NES, dated August 1984, states, "…outfalls to Sand Creek which in turn outfalls to Fountain Creek." C.R.S. 37-92-602(8) indicates that "The provisions of this subsection (8)…do not apply to Fountain creek and its tributaries, except for facilities required by or operated in compliance with a Colorado discharge permit system municipal separate storm sewer system permit issued by the department of public health and environment…"

   The proposed detention and stormwater quality infiltration basins designed to serve the project site as described in the *Final Drainage Report* and in the *Grading & Erosion Control Plan* are required by and intended to be operated in compliance with such a municipal separate storm sewer system permit.

Sincerely,

10 / 10 / 22

Jay M. Newell, PE
Sterling Design Associates, llc
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Littleton, CO 80120
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STERLING
DESIGN ASSOCIATES
Civil Engineers | Landscape Architects

October 10, 2022

Matthew Fitzsimmons
El Paso County Development Services Department
2880 International Circle, Suite 110
Colorado Springs, CO 80910-3127

RE: Space Village Minor Subdivision, MS-22-7

To Whom It May Concern:

This letter is in response to comments provided from Mike McCarthy of El Paso County Public Health, dated October 5, 2022.

1. El Paso County Public Health notes that the "…water quality basins must have mosquito control responsibilities included as a part of the construction design and maintenance plan to help control mosquito breeding habitat…"

   Volume 3 of the Mile High Flood District's *Urban Storm Drainage Criteria Manual* includes guidance on mosquito control under its Chapter 6: BMP Maintenance, Section 7.0: Extended Detention Basins (EDBs), Subsection 7.5: Mosquito Control. This section indicates that "Although mosquitoes prefer shallow, stagnant water, they can breed within the top 6 to 8 inches of deeper pools…" and that they "…prefer shelter from direct sunlight." The criteria suggests that regardless of design practices developed to deter mosquito breeding, "…some level of mosquito control may be necessary…" The criteria recommends "…weekly inspection for signs of mosquito breeding with treatment when breeding is found…" from "…mid-May…to mid-September." The section indicates that "Treatment should be targeted toward mosquito larvae…" and that the "…use of larvicidal briquettes or 'dunks' may be appropriate…"

   Tri-County Health similarly recommends the use of "dunks…containing BTi…in bodies of water that cannot be drained (e.g. ponds, large puddles, low spots in fields)."

   The Final Drainage Report has been revised to address mosquito control, most specifically through reference to the accompanying *Standard Operation Procedures for Inspection and Maintenance* manual.

Sincerely,

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Y - Satisfies criteria

N - Needs to be addressed

# EL PASO COUNTY
# GRADING AND EROSION CONTROL PLAN CHECKLIST

EPC Project Number: MS227 Revised

Revised: October 2021

| | | Applicant | EPC |
|---|---|---|---|
| **1. GRADING AND EROSION CONTROL PLAN** (complete form using Y, N, N/A in the "Applicant" column) | | | |
| a | Vicinity map | | Y |
| b | Adjacent city/town/jurisdictional boundaries, subdivision names, and property parcel numbers labeled | | Y |
| c | North arrow and acceptable scale (1"=20' to 1"=100') | | Y |
| d | Legend for all symbols used in the plan | | Y |
| e | Existing and proposed property lines. Proposed subdivision boundary for subdivision projects | | Y |
| f | All existing structures | | Y |
| g | All existing utilities | | Y |
| h | Construction site boundaries | | Y |
| i | Existing vegetation (notes are acceptable in cases where there is no notable vegetation, only grasses/weeds, or site has already been stripped) | | Y |
| j | FEMA 100-yr floodplain | | Y |
| k | Existing and proposed water courses including springs, streams, wetlands, detention ponds, stormwater quality structures, roadside ditches, irrigation ditches and other water surfaces. Show maintenance of pre-existing vegetation within 50 fe[illegible] | | Y |
| l | Existing and proposed contours 2 feet or less (except [illegible]) Revised per plan comment. | | Y |
| m | Limits of disturbance delineating all anticipated areas of soil disturbance | | N |
| n | Identify and protect areas outside of the construction site boundary with existing fencing, construction fencing or other methods as appropriate | | Y |
| o | Off-site grading clearly shown and called out Revise to "Y" because the two entrances appear to be outside the PL. | | Y |
| p | Areas of cut and fill identified Revised. | | Y |
| q | Conclusions from soils/geotechnical report and geologic hazards report incorporated in grading design (slopes, embankments, materials, mitigation, etc.) | | N/A |
| r | Proposed slopes steeper than 3:1 with top and toe of slope delineated. Erosion control blanketing or other protective covering required | | N/A |
| s | Stormwater flow direction arrows | | Y |
| t | Location of any dedicated asphalt / concrete batch plants | | N/A |
| u | Areas used for staging, storage of building materials, soils (stockpiles) or wastes. The use of construction office trailers requires PCD permitting | | Y |
| v | All proposed temporary construction control measures, structural and non-structural. Temporary construction control measures shall be identified by phase of implementation to include" "initial," "interim," and "final" or shown on separate phased maps identifying each phase | | Y |
| w | Vehicle tracking provided at all construction entranc[illegible] and/or signage provided at access points not to be used for construction Refer to response per plan comment. | | Y |
| x | Temporary sediment ponds provided for disturbed drainage areas greater than 1 acre | | N |

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| y | Dewatering operations to include locations of diver Revised per plan comment. time of design | | N/A |
| z | All proposed temporary construction control measure details. Custom or other jurisdiction's details used must meet or exceed EPC standards | | N |
| aa | Any off-site stormwater control measure proposed for use by the project and not under the direct control or ownership of the Owner or Operator | | N/A |
| bb | Existing and proposed permanent storm water management facilities, including areas proposed for stormwater infiltration or subsurface detention | | Y |
| cc | Existing and proposed easements (permanent and construction) including required off-site easements | | Y |
| dd | Retaining walls shall not to be located in County ROW unless approved via license agreement. A building permit from Regional Building Department is required for walls greater than or equal to 4 feet in height, series of walls, or walls supporting a surcharge and must be design by P.E. | | N/A |
| ee | Plan certified by a Colorado Registered P.E., with EPC standard signature blocks for Engineer, Owner and EPC | | Y |
| ff | Engineer's Statement (for standalone GEC Plan):<br>This Grading and Erosion Control Plan was prepared under my direction and supervision and is correct to the best of my knowledge and belief. Said Plan has been prepared according to the criteria established by the County for Grading and Erosion Control Plans. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparing this plan.<br>_____ _____<br>Engineer of Record Signature Date | | Y |
| gg | Engineer's Statement (for GEC Plan within Construction Drawing set):<br>These detailed plans and specifications were prepared under my direction and supervision. Said plans and specifications have been prepared according to the criteria established by the County for detailed roadway, drainage, grading and erosion control plans and specifications, and said plans and specifications are in conformity with applicable master drainage plans and master transportation plans. Said plans and specifications meet the purposes for which the particular roadway and drainage facilities are designed and are correct to the best of my knowledge and belief. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparation of these detailed plans and specifications.<br>_____ _____<br>Engineer of Record Signature Date | | N/A |
| hh | Owner's Statement (for standalone GEC Plan):<br>I, the owner/developer have read and will comply with the requirements of the Grading and Erosion Control Plan.<br>_____ _____<br>Owner Signature Date | | Y |
| ii | Owner's Statement (for GEC Plan within Construction Drawing set):<br>I, the owner/developer have read and will comply with the requirements of the grading and erosion control plan and all of the requirements specified in these detailed plans and specifications.<br>_____ _____<br>Owner Signature Date | | N/A |

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| | | Applicant | EPC |
|---|---|---|---|
| jj | El Paso County:<br>County plan review is provided only for general conformance with County Design Criteria. The County is not responsible for the accuracy and adequacy of the design, dimensions, and/ or elevations which shall be confirmed at the job site. The County through the approval of this document assumes no responsibility for completeness and/ or accuracy of this document.<br><br>Filed in accordance with the requirements of the El Paso County Land Development Code, Drainage Criteria Manual Volumes 1 and 2, and Engineering Criteria Manual, as amended.<br><br>In accordance with ECM Section 1.12, these construction documents will be valid for construction for a period of 2 years from the date signed by the El Paso County Engineer. If construction has not started within those 2 years, the plans will need to be resubmitted for approval, including payment of review fees at the Planning and Community Development Director's discretion.<br><br>_____ _____<br>Jennifer Irvine, P.E. Date<br>County Engineer/ECM Administrator | | Y |
| **2. ADDITIONAL REPORTS/PERMITS/DOCUMENTS** | | | |
| a | Soils report / geotechnical investigation as appropriate for grading/utilities/drainage/road construction. | | |
| b | Use Agreement/easement between the Owner or Operator and other third party for use of all off-site grading or stormwater control measures, used by the owner or operator but not under their direct control or ownership. | | |
| c | Floodplain Development Permit | | |
| d | USACE 404/wetlands permit/mitigation plan | | |
| e | FEMA CLOMR | | |
| f | State Engineer's permit/Notice Of Intent to Construct | | |
| g | Stormwater Management Plan (SWMP) | | |
| h | Financial Assurance Estimate (FAE) (signed) | | |
| i | Erosion and Stormwater Quality Control Permit (ESQCP) (signed) | | |
| j | Pre-Development Site Grading Acknowledgement & Right of Access Form (signed) | | |
| k | Conditions of Approval met? | | |

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# EL PASO COUNTY
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EPC Project Number:

Revised: October 2021

| | | Applicant | EPC |
|---|---|---|---|
| **3. STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS** | | | |
| 1 | Stormwater discharges from construction sites shall not cause or threaten to cause pollution, contamination, or degradation of State Waters. All work and earth disturbance shall be done in a manner that minimizes pollution of any on-site or off-site waters, including wetlands. | | Y |
| 2 | Notwithstanding anything depicted in these plans in words or graphic representation, all design and construction related to roads, storm drainage and erosion control shall conform to the standards and requirements of the most recent version of the relevant adopted El Paso County standards, including the Land Development Code, the Engineering Criteria Manual, the Drainage Criteria Manual, and the Drainage Criteria Manual Volume 2. Any deviations from regulations and standards must be requested, and approved, in writing. | | Y |
| 3 | A separate Stormwater Management Plan (SMWP) for this project shall be completed and an Erosion and Stormwater Quality Control Permit (ESQCP) issued prior to commencing construction. Management of the SWMP during construction is the responsibility of the designated Qualified Stormwater Manager or Certified Erosion Control Inspector. The SWMP shall be located on-site at all times during construction and shall be kept up to date with work progress and changes in the field. | | Y |
| 4 | Once the ESQCP is approved and a “Notice to Proceed” has been issued, the contractor may install the initial stage erosion and sediment control measures as indicated on the approved GEC. A Preconstruction Meeting between the contractor, engineer, and El Paso County will be held prior to any construction. It is the responsibility of the applicant to coordinate the meeting time and place with County staff. | | Y |
| 5 | Control measures must be installed prior to commencement of activities that could contribute pollutants to stormwater. Control measures for all slopes, channels, ditches, and disturbed land areas shall be installed immediately upon completion of the disturbance. | | Y |
| 6 | All temporary sediment and erosion control measures shall be maintained and remain in effective operating condition until permanent soil erosion control measures are implemented and final stabilization is established. All persons engaged in land disturbance activities shall assess the adequacy of control measures at the site and identify if changes to those control measures are needed to ensure the continued effective performance of the control measures. All changes to temporary sediment and erosion control measures must be incorporated into the Stormwater Management Plan. | | Y |
| 7 | Temporary stabilization shall be implemented on disturbed areas and stockpiles where ground disturbing construction activity has permanently ceased or temporarily ceased for longer than 14 days. | | Y |
| 8 | Final stabilization must be implemented at all applicable construction sites. Final stabilization is achieved when all ground disturbing activities are complete and all disturbed areas either have a uniform vegetative cover with individual plant density of 70 percent of pre-disturbance levels established or equivalent permanent alternative stabilization method is implemented. All temporary sediment and erosion control measures shall be removed upon final stabilization and before permit closure. | | Y |
| 9 | All permanent stormwater management facilities shall be installed as designed in the approved plans. Any proposed changes that effect the design or function of permanent stormwater management structures must be approved by the ECM Administrator prior to implementation. | | Y |

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| 10 | Earth disturbances shall be conducted in such a manner so as to effectively minimize accelerated soil erosion and resulting sedimentation. All disturbances shall be designed, constructed, and completed so that the exposed area of any disturbed land shall be limited to the shortest practical period of time. Pre-existing vegetation shall be protected and maintained within 50 horizontal feet of a waters of the state unless shown to be infeasible and specifically requested and approved. | | Y |
| 11 | Compaction of soil must be prevented in areas designated for infiltration control measures or where final stabilization will be achieved by vegetative cover. Areas designated for infiltration control measures shall also be protected from sedimentation during construction until final stabilization is achieved. If compaction prevention is not feasible due to site constraints, all areas designated for infiltration and vegetation control measures must be loosened prior to installation of the control measure(s). | | Y |
| 12 | Any temporary or permanent facility designed and constructed for the conveyance of stormwater around, through, or from the earth disturbance area shall be a stabilized conveyance designed to minimize erosion and the discharge of sediment off-site. | | Y |
| 13 | Concrete wash water shall be contained and disposed of in accordance with the SWMP. No wash water shall be discharged to or allowed to enter State Waters, including any surface or subsurface storm drainage system or facilities. Concrete washouts shall not be located in an area where shallow groundwater may be present, or within 50 feet of a surface water body, creek or stream. | | Y |
| 14 | During dewatering operations, uncontaminated groundwater may be discharged on-site, but shall not leave the site in the form of surface runoff unless an approved State dewatering permit is in place. | | Y |
| 15 | Erosion control blanketing or other protective covering shall be used on slopes steeper than 3:1. | | Y |
| 16 | Contractor shall be responsible for the removal of all wastes from the construction site for disposal in accordance with local and State regulatory requirements. No construction debris, tree slash, building material wastes or unused building materials shall be buried, dumped, or discharged at the site. | | Y |
| 17 | Waste materials shall not be temporarily placed or stored in the street, alley, or other public way, unless in accordance with an approved Traffic Control Plan. Control measures may be required by El Paso County Engineering if deemed necessary, based on specific conditions and circumstances. | | Y |
| 18 | Tracking of soils and construction debris off-site shall be minimized. Materials tracked off-site shall be cleaned up and properly disposed of immediately. | | Y |
| 19 | The owner/developer shall be responsible for the removal of all construction debris, dirt, trash, rock, sediment, soil, and sand that may accumulate in roads, storm drains and other drainage conveyance systems and stormwater appurtenances as a result of site development. | | Y |
| 20 | The quantity of materials stored on the project site shall be limited, as much as practical, to that quantity required to perform the work in an orderly sequence. All materials stored on-site shall be stored in a neat, orderly manner, in their original containers, with original manufacturer's labels. | | Y |
| 21 | No chemical(s) having the potential to be released in stormwater are to be stored or used on-site unless permission for the use of such chemical(s) is granted in writing by the ECM Administrator. In granting approval for the use of such chemical(s), special conditions and monitoring may be required. | | Y |
| 22 | Bulk storage of allowed petroleum products or other allowed liquid chemicals in excess of 55 gallons shall require adequate secondary containment protection to contain all spills on-site and to prevent any spilled materials from entering State Waters, any surface or subsurface storm drainage system or other facilities. | | Y |

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| 23 | No person shall cause the impediment of stormwater flow in the curb and gutter or ditch except with approved sediment control measures. | | Y |
| 24 | Owner/developer and their agents shall comply with the "Colorado Water Quality Control Act" (Title 25, Article 8, CRS), and the "Clean Water Act" (33 USC 1344), in addition to the requirements of the Land Development Code, DCM Volume II and the ECM Appendix I. All appropriate permits must be obtained by the contractor prior to construction (1041, NPDES, Floodplain, 404, fugitive dust, etc.). In the event of conflicts between these requirements and other laws, rules, or regulations of other Federal, State, local, or County agencies, the most restrictive laws, rules, or regulations shall apply. | | Y |
| 25 | All construction traffic must enter/exit the site only at approved construction access points. | | Y |
| 26 | Prior to construction the permittee shall verify the location of existing utilities. | | Y |
| 27 | A water source shall be available on-site during earthwork operations and shall be utilized as required to minimize dust from earthwork equipment and wind. | | Y |
| 28 | The soils report for this site has been prepared by **[Company Name, Date of Report]** and shall be considered a part of these plans. | | Y |
| 29 | At least ten (10) days prior to the anticipated start of construction, for projects that will disturb one (1) acre or more, the owner or operator of construction activity shall submit a permit application for stormwater discharge to the Colorado Department of Public Health and Environment, Water Quality Division. The application contains certification of completion of a stormwater management plan (SWMP), of which this Grading and Erosion Control Plan may be a part. For information or application materials contact:<br><br>Colorado Department of Public Health and Environment<br>Water Quality Control Division<br>WQCD – Permits<br>4300 Cherry Creek Drive South<br>Denver, CO 80246-1530<br>Attn: Permits Unit | | Y |
| **4. APPLICANT COMMENTS** | | | |
| a | | | |
| b | | | |
| c | | | |

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# EL PASO COUNTY
# GRADING AND EROSION CONTROL PLAN CHECKLIST

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| **5. CHECKLIST REVIEW CERTIFICATIONS** | | | |
| a | Engineer of Record:<br>The Grading and Erosion Control Plan was prepared under my direction and supervision and is complete and correct to the best of my knowledge and belief. Said Plan has been prepared according to the criteria established by the County for Grading and Erosion Control Plans.<br><br>_____ _____<br>Engineer of Record Signature Date | | Y |
| b | Review Engineer:<br>The Grading and Erosion Control Plan was reviewed and found to meet the checklist requirements except where otherwise noted or allowed by an approved deviation request.<br><br>_____ _____<br>Review Engineer Date | | |

# Standard Operation Procedures
for
# Inspection and Maintenance
of
# Stormwater Quality Infiltration Basin(s)

# Space Village Filing No. 4

Owner:
Hampton Partners
201 Fillmore St., Suite 201
Denver, CO 80206
303-694-1085

El Paso County Department of Public Works
3275 Akers Drive
Colorado Springs, CO 80922

dotweb@elpasoco.com
719-520-6900

## Introduction

This plan addresses operation and maintenance of private detention / stormwater quality facilities (East and West Ponds) constructed as part of the Space Villlage Filing No. 4 development project, one-quarter mile east of the intersection of Peterson Boulevard and Space Village Avenue (EPC PCD projects number(s): XX-XX-XXX. The plat number of **Space Village Filing No. 4** is **XX-XX-XXX.**

MS227 Revised.

## Background

The State of Colorado Department of Public Health and Environment, Water Quality Control Division (CDPHE), has implemented federal regulations within the State of Colorado through permitting, and has included El Paso County as one of numerous Municipal Separate Storm Sewer Systems (MS4s) required to be permitted in compliance with National Pollutant Discharge Elimination System (NPDES) Phase 2 Regulations, as defined within Colorado's Phase 2 Municipal Guidance.

NPDES Phase 2 MS4s stormwater discharges are covered under a general permit under the Colorado Discharge Permit System (CDPS) under Regulation 61, and as a minimum require the MS4's operator (e.g., El Paso County) to develop, implement, and enforce a stormwater management program to reduce the discharge of pollutants to the maximum extent practicable to protect water quality requirements of the Colorado Water Quality Control Act, Colorado Code of Regulations [CCR] 61.8(11)(a)(i)).

This Stormwater Facilities Operation and Maintenance Plan (O&M Plan) is for the private on site detention facilities (East and West Ponds) constructed as part of the development project referenced above. Click or tap here to enter text.

## Associated Agreements

The Private Detention / Stormwater Quality Best Management Practice Maintenance Agreement and Easement (Maintenance Agreement) for the development requires the property owner to construct the detention and stormwater quality facilities in accordance with county approved plans and to regularly and routinely inspect, clean, and maintain the facilities in good repair at their own expense. The Maintenance Agreement includes provision of an easement granted to the county to allow the county to access, inspect, clean, repair and maintain the facilities; although those duties are not implied to be that of the county.

The Subdivision Improvements Agreement (SIA) for the development requires the developer to complete the pond improvements as itemized in the associated Financial Assurance Estimate (FAE) and to provide collateral to remain in effect at all times until the improvements are completed and accepted in accordance with county regulations.

## Funding for and Organization of Facility Operation and Maintenance

Hampton Partners will be responsible for operations and maintenance of the East and West Pond detention facilities upon acceptance of the facilities.

## Site and Facilities Description

1) The East Pond is located along the south boundary of Lot 2, Block 1, Space Village Filing No. 4. The West Pond is located along the south boundary of Lot 1, Block 1, Space Village Filing No. 4.

2) Access to the site is by means of two drive entrances directly off Space Village Avenue. Access through the site is by means of any private drives constructed in conjunction with the development of the site with permission of the property owner. Access easement(s) around the perimeter of the site and immediately adjacent to a constructed channel, a constructed swale

and the constructed ponds allow access to drainage facilities for inspection and maintenance of the facilities as described below.

3) Emergency spillways for the East and the West Pond are comprised of each ponds' southernmost embankment. Runoff that is discharged over the spillways will be conveyed as sheet flow towards Peterson Air Force Base comparable to the historic condition.

4) Runoff enters the East Pond as sheet flow directly from the site. A drainage channel conveying off site runoff contributes flow at the pond's east end. The offsite runoff will utilize any excess pond capacity before bypassing the pond by means of the emergency spillway. The pond does not include any formal facilities (forebay, trickle channel, outlet structure, etc.) Runoff captured within the pond is infiltrated directly into the ground. Runoff enters the West Pond as sheet flow directly from the site. A drainage swale conveying off site runoff contributes flow at the pond's west end. The offsite runoff will utilize any excess pond capacity before bypassing the pond by means of the emergency spillway. The pond does not include any formal facilities (forebay, trickle channel, outlet structure, etc.) Runoff captured within the pond is infiltrated directly into the ground.

## Stormwater Quality Infiltration Basin (SQIB) Description

The subsections below describe general SQIB operations and maintenance.

## SQIB-1 GENERAL SQIB CONCEPT

Stormwater Quality Infiltration Basins (SQIBs) are permanent stormwater control measures. A SQIB is a sedimentation basin designed to capture stormwater runoff, and to drain completely sometime after stormwater runoff ends. The basins are considered to be "dry" because the basin is designed not to have a significant permanent pool of water remaining between runoff events.

SQIBs are an adaptation of a detention basin used for flood control, with the primary difference being the addition of volume to accommodate the Water Quality Capture Volume (WQCV). The basins collect and infiltrate stormwater runoff capturing sediment within the basin as runoff infiltrates into the ground.

## SQIB-2 INSPECTING STORMWATER QUALITY INFILTRATION BASINS (SQIBs)

### SQIB-2.1 Access and Easements

Inspection and maintenance personnel may utilize the attached stormwater facility map containing the location(s) of the access points and maintenance easements of the SQIB(s) within this development.

### SQIB-2.2 Stormwater Management Facilities Locations

Inspection and maintenance personnel may utilize the attached stormwater facility map containing the location(s) of the SQIB(s) within this development.

### SQIB-2.3 Stormwater Quality Infiltration Basin (SQIB) Features

SQIBs have a number of features that are designed to serve a particular function. Many times the proper function of one feature depends on another.

Therefore, it is critical that each feature of the SQIB is properly inspected and maintained to ensure that the overall facility functions as it was intended. Below is a list and description of the most common features within a SQIB and the corresponding maintenance inspection items that can be anticipated:

## Table SQIB-1: Typical Inspection & Maintenance Requirements Matrix

| SQIB Features | Sediment Removal | Mowing/ Weed Control | Trash & Debris Removal | Erosion | Over-grown Vegetation Removal | Standing Water (mosquito/ algae control) |
|---|---|---|---|---|---|---|
| **Inflow Points (outfalls)** | X | X | X | X | X | |
| **Basin** | X | X | X | X | X | X |
| **Emergency Spillway** | | | X | X | X | |

SQIB-2.3.1 Inflow Points

Inflow Points or Outfalls into SQIBs are the point source of the stormwater discharge into the facility. An inflow point is commonly a storm sewer pipe with a flared end section that discharges into the SQIB. In some instances, an inflow point could be a drainage channel or ditch that flows into the facility.

An energy dissipater (riprap or hard armor protection) is typically immediately downstream of the discharge point into the SQIB to protect from erosion. In some cases, a storm sewer outfall can have a toe- wall or cut-off wall immediately below the structure to prevent undercutting of the outfall from erosion.

*The typical maintenance items that are found with inflow points are as follows:*

*a. Riprap Displaced* – Many times, because the repeated impact/force of water, riprap, if installed, can shift and settle. If any portion of a riprap apron appears to have settled, soil is present between the riprap, or the riprap has shifted, maintenance may be required to ensure future erosion is prevented.

*b. Erosion Present/Outfall Undercut* – In some situations, an energy dissipater may not have been sized, constructed, or maintained appropriately and erosion has occurred. Any erosion within the vicinity of the inflow point will require maintenance to prevent damage to the structure(s) and sediment transport within the facility.

*c. Sediment Accumulation* – Because of the turbulence in the water created by an energy dissipater, sediment often deposits immediately downstream of the inflow point. To prevent a loss in hydraulic performance of the upstream infrastructure, sediment that accumulates in this area must be removed in a timely manner.

*d. Woody Growth/Weeds Present* – Undesirable vegetation can grow in and around the inflow area to a SQIB that can significantly affect the performance of the drainage facilities discharging into the facility. This type of vegetation includes trees (typically cottonwoods) and dense areas of shrubs (willows). If woody vegetation is not routinely mowed/removed, the growth can cause debris/sediment to accumulate, resulting in blockage of the discharge. Routine maintenance is essential for trees (removing a small tree/sapling is much cheaper and “quieter” than a mature tree). In addition, noxious weeds growing in the facility can result in the loss of desirable native vegetation and impact adjacent open spaces/land.

*e. Trash/Debris* – Trash and debris can accumulate in the basin after large events, or from illegal dumping. Over time, this material can accumulate and clog the SQIB.

SQIB-2.3.2 Basin

The basin is designed to store runoff events. This area of the SQIB may develop wetland vegetation.

*The typical maintenance items that are found with the basin are as follows:*

*a. Sediment/Debris Accumulation* – The basin accumulates sediment and debris. This material must be removed to maintain pond volume and proper function of the basin.

*b. Woody Growth/Weeds Present* – Woody growth (cottonwoods/willows) can create operational problems for the SQIB. The basin will have to be dredged to ensure volume, and large trees and shrubs will be difficult to protect during that operation. Routine management is essential for trees (removing a small tree/sapling is much cheaper and less disruptive than removing a mature tree).

*c. Bank Erosion* –The bottom grades of the basin are typically flat enough that erosion should not occur. However, inadequate vegetative cover may result in erosion of the basin banks. Erosion that occurs in this area can result in increased dredging/maintenance.

*d. Petroleum/Chemical Sheen* – Indicators of illicit discharges into the drainage system may be present in the basin. These indicators can include sheens, odors, discolored soil, and dead vegetation. If it is suspected that an illicit discharge has occurred, contact County Stormwater immediately. Proper removal/mitigation of contaminated soils and water in the SQIB is necessary to minimize any environmental impacts downstream.

*e. Vegetation Sparse* – Basin aesthetics are important. Adequate and properly maintained vegetation can greatly increase the overall appearance and acceptance of the SQIB by the public. In addition, vegetation can reduce the potential for erosion and subsequent sediment transport to the other areas of the pond.

*f. Standing Water/Boggy Areas* – Standing water or boggy areas in the basin can encourage mosquito and algae problems. Mosquito larvae can be laid by adult mosquitoes within shallow water. Aquatic vegetation that grows in shallow can decompose causing foul odors. Chemical/mechanical treatment of these areas may be necessary to reduce impacts to adjacent homeowners Routine maintenance (mowing, trash removal, etc.) can also be extremely difficult for the basin if the ground is saturated. If this inspection item is checked, make sure you have identified the root cause of the problem.

*g. Trash/Debris* – Trash and debris can accumulate in the basin after large events, or from illegal dumping. Over time, this material can accumulate and clog the SQIB.

*h. Maintenance Access* – Most SQIBs typically have a maintenance access path to the basin bottom and/or around the basin. This access path should be inspected to ensure the surface is still drivable. Some of the smaller SQIBs may not have maintenance access paths; however, the inspector should verify that access is available from adjacent properties.

SQIB-2.3.3 Emergency Spillway

An emergency spillway is typical of all SQIBs and designed to serve as the overflow in the

event the volume of the pond is exceeded. The emergency spillway may be armored with riprap (or other hard armor) and is sometimes buried with soil. The emergency spillway is typically a weir (notch) in the pond embankment. Proper function of the emergency spillway is essential to ensure flooding does not affect adjacent properties.

*The typical maintenance items that are found with emergency spillways are as follows:*

*a. Riprap Displaced* – If the emergency spillway is armored with riprap to provide erosion protection; over the life of an SQIB, the riprap may shift or dislodge due to flow.

*b. Erosion Present* – Stormwater flowing through the spillway can cause erosion damage. Erosion must be repaired to ensure the integrity of the basin embankment, and proper function of the spillway.

*c. Woody Growth/Weeds Present* – Management of woody vegetation is essential in the proper long-term function of the spillway. Larger trees or dense shrubs can capture larger debris entering the SQIB and reduce the capacity of the spillway.

*d. Obstruction Debris* – The spillway must be cleared of any obstruction (man-made or natural) to ensure the proper design capacity.

SQIB-2.3.4 Miscellaneous

There are a variety of inspection/maintenance issues that may not be attributed to a single feature within the SQIB. This category on the inspection form is for maintenance items that are commonly found in the SQIB but may not be attributed to an individual feature.

*a. Encroachment in Easement Area* – Private lots/property can sometimes be located very close to the SQIBs, even though they are required to be located in tracts with drainage easements. Property owners may place landscaping, trash, fencing, or other items within the easement area that may affect maintenance or the operation of the facility.

*b. Graffiti/Vandalism* – Damage to the SQIB infrastructure can be caused by vandals. If criminal mischief is evident, the inspector should forward this information to the local Sheriff's Office.

*c. Public Hazards* – Public hazards include items such as vertical drops of greater than 4-feet, containers of unknown/suspicious substances, exposed metal/jagged concrete on structures. If any hazard is found within the facility area that poses an immediate threat to public safety, contact the Sheriff at 911 immediately!

*d. Burrowing Animals/Pests* – Prairie dogs and other burrowing rodents may cause damage to the SQIB features and negatively affect the vegetation within the SQIB. Consult EPC Environmental Division if this becomes an issue.

*e. Other* – Any miscellaneous inspection/maintenance items not contained on the form should be entered here.

## SQIB-3 MAINTAINING STORMWATER QUALITY INFILTRATION BASINS (SQIBs)

### SQIB-3.1 Maintenance Personnel

Maintenance personnel must be qualified to properly maintain SQIBs. Inadequately trained personnel can cause additional problems resulting in additional maintenance costs.

## SQIB-3.2 Equipment

It is imperative that the appropriate equipment and tools are taken to the field with the operations crew. The types of equipment/tools will vary depending on the task at hand. Below is a list of tools, equipment, and material(s) that may be necessary to perform maintenance on a SQIB:

1.) Loppers/Tree Trimming Tools
2.) Mowing Tractors
3.) Trimmers (extra string)
4.) Shovels
5.) Rakes
6.) All Surface Vehicle (ASVs)
7.) Skid Steer
8.) Backhoe
9.) Track Hoe/Long Reach Excavator
10.) Dump Truck
11.) Engineers Level (laser)
12.) Riprap
13.) Filter Fabric
14.) Erosion Control Blanket(s)
15.) Seed Mix (Native)
16.) Illicit Discharge Cleanup Kits
17.) Trash Bags
18.) Tools (wrenches, screw drivers, hammers, etc.)
19.) Chain Saw
20.) Approved Stormwater Facility Operation and Maintenance Manual

Some of the items identified above may not be needed for every maintenance operation. However, this equipment should be available to the maintenance operations crews should the need arise.

## SQIB-3.3 Safety

Vertical drops may be encountered in areas located within and around the facility. Avoid walking on top of retaining walls or other structures that have a significant vertical drop. If a vertical drop is identified within the SQIB that is greater than 48” in height, make the appropriate note/comment on the maintenance inspection form.

## SQIB-3.4 Maintenance Categories and Activities

A typical SQIB Maintenance Program will consist of three broad categories of work: routine, minor, and major maintenance activities. Within each category of work, a variety of maintenance activities can be performed on a SQIB. A maintenance activity can be specific to each feature within the SQIB, or general to the overall facility. A variety of maintenance activities are typical of SQIBs. The maintenance activities range in magnitude from routine trash pickup to the reconstruction of drainage infrastructure. The following three sub-sections (3.5, 3.6, and 3.7) explain each of the categories and briefly describes the typical maintenance activities for a SQIB, including the objectives and frequency of actions.

## SQIB-3.5 Routine Maintenance Activities

The majority of this work consists of regularly scheduled mowing and trash and debris pickups for stormwater management facilities during the growing season. This includes items such as

the removal of debris/material. It also includes activities such as weed control, mosquito treatment, and algae treatment. These activities will normally be performed numerous times during the year. These items can be completed without any prior correspondence with the EPC Stormwater; however, completed inspection and maintenance forms shall be retained for each inspection and maintenance activity.

The Maintenance Activities are summarized below, and further described in the following sub-sections.

**TABLE SQIB-2: Summary of Routine Maintenance Activities**

| MAINTENANCE ACTIVITY | MINIMUM FREQUENCY | LOOK FOR | MAINTENANCE ACTION |
|---|---|---|---|
| | | | |
| **Mowing** | Twice annually | Excessive grass height/aesthetics | Mow grass to a height of 4" to 6" |
| **Trash/Debris Removal** | Twice annually | Trash & debris in SQIB | Remove and dispose of trash and debris |
| **Weed control** | Minimum twice annually | Noxious weeds; Unwanted vegetation | Treat w/ herbicide or hand pull; Consult the local weed specialist |
| **Mosquito Treatment** | As needed | Standing water/ mosquito habitat | Treat w/ EPA approved chemicals |
| **Algae Treatment** | As needed | Standing water/ Algal growth/green color | Treat w/ EPA approved chemicals |

SQIB-3.5.1 Mowing

Occasional mowing is necessary to limit unwanted vegetation and to improve the overall appearance of the SQIB. Native vegetation should be mowed to a height of 4-to-6 inches tall. Grass clippings should be collected and disposed of properly.

*Frequency* – Routine - Minimum of twice annually or depending on aesthetics.

SQIB-3.5.2 Trash/Debris Removal

Trash and debris must be removed from the entire SQIB area to minimize clogging and to improve aesthetics. This activity must be performed prior to mowing operations.

*Frequency* – Routine – Prior to mowing operations and minimum of twice annually.

SQIB-3.5.3 Weed Control

Noxious weeds and other unwanted vegetation must be treated as needed throughout the SQIB. This activity can be performed either through mechanical means (mowing/pulling) or with herbicide. Consultation with the Environmental Division at 719-520-7878 is highly recommended prior to the use of herbicide.

*Frequency* – Routine – As needed based on inspections.

SQIB-3.5.4 Mosquito/Algae Treatment

Treatment of permanent pools that may have formed is necessary to control mosquitoes and undesirable aquatic vegetation that can create nuisances. Only EPA approved chemicals/materials can be used in areas that are warranted.

*Frequency* – As needed.

## SQIB- 3.6 Minor Maintenance Activities

This work consists of a variety of isolated or small-scale maintenance or operational problems. Most of this work can be completed by a small crew, tools, and small equipment. These items may require prior correspondence with EPC Stormwater and require completed inspection and maintenance forms to be submitted to EPC upon request for each inspection and maintenance activity.

**Table SQIB-3: Summary of Minor Maintenance Activities**

| MAINTENANCE ACTIVITY | MINIMUM FREQUENCY | LOOK FOR | MAINTENANCE ACTION |
|---|---|---|---|
| | | | |
| **Sediment Removal** | As needed; typically every 1–2 years | Sediment build-up; decrease in pond volume | Remove and dispose of sediment |
| **Erosion Repair** | As needed, based upon inspection | Rills/gullies forming on side slopes, trickle channel, other areas | Repair eroded areas Revegetate; address source of erosion |
| **Vegetation Removal/Tree Thinning** | As needed, based upon inspection | Large trees/wood vegetation in lower stage of pond | Remove vegetation; restore grade and surface |

### SQIB-3.6.1 Sediment Removal

Sediment removal is necessary to maintain the original design volume of the SQIB and to ensure proper function of the infrastructure. Regular sediment removal (minor) from the inflow(s) can significantly reduce the frequency of major sediment removal activities (dredging) in the basin. The minor sediment removal activities can typically be addressed with shovels and smaller equipment. Major sediment removal activities will require larger and more specialized equipment. The major sediment activities will also require surveying with an engineer's level, and consultation with EPC Stormwater Staff to ensure design volumes/grades are achieved.

Stormwater sediments removed from SQIBs do not meet the criteria of "hazardous waste". However, these sediments are contaminated with a wide array of organic and inorganic pollutants and handling must be done with care. Sediments from permanent pools that may have formed must be carefully removed to minimize turbidity, further sedimentation, or other adverse water quality impacts. Sediments should be transported by motor vehicle only after they are dewatered. All sediments must be taken to a landfill for proper disposal. Prompt and thorough cleanup is important should a spill occur during transportation.

*Frequency* – Nonroutine – As necessary based upon inspections.

### SQIB-3.6.2 Erosion Repair

The repair of eroded areas is necessary to ensure the proper function of the SQIB, minimize sediment transport, and to reduce potential impacts to other features. Erosion can vary in magnitude from minor repairs and rilling to major gullies in the embankments and spillways. The repair of eroded areas may require the use of excavators, earthmoving equipment, riprap, concrete, erosion control blankets, and turf reinforcement mats. Major erosion repair to the pond embankments and spillways will require consultation with EPC Stormwater Staff.

*Frequency* – Nonroutine – As necessary based upon inspections.

SQIB-3.6.3 Vegetation Removal/Tree Thinning

Dense stands of woody vegetation (willows, shrubs, etc) or trees can create maintenance problems for the infrastructure within a SQIB. Tree roots can damage the basin thereby blocking flows. Also, trees growing in the basin of the SQIB will most likely have to be removed when sediment/dredging operations occur. A small tree is easier to remove than a large tree, therefore, regular removal/thinning is preferred. All trees and woody vegetation that is growing in the bottom of the SQIB or near structures (inflows, emergency spillways, etc) should be removed.

*Frequency* – Nonroutine – As necessary based upon inspections.

## SQIB-3.7 Major Maintenance Activities

This work consists of larger maintenance/operational problems and failures within the stormwater management facilities. All of this work requires consultation with EPC Stormwater Staff to ensure the proper maintenance is performed. This work requires that the staff review the original design and construction drawings to assess the situation and assign the necessary maintenance. **An ESQCP permit may be required for major maintenance activities.** This work may also require more specialized maintenance equipment, design/details, surveying, or assistance through private contractors and consultants.

**Table SQIB-4: Summary of Major Maintenance Activities**

| MAINTENANCE ACTIVITY | MINIMUM FREQUENCY | LOOK FOR | MAINTENANCE ACTION |
|---|---|---|---|
| | | | |
| **Major Sediment Removal** | As needed – based upon scheduled inspections | Large quantities of sediment; reduced pond capacity | Remove and dispose of sediment. Repair vegetation as needed |
| **Major Erosion Repair** | As needed – based upon scheduled inspections | Severe erosion including gullies, excessive soil displacement, areas of settlement, holes | Repair erosion – find cause of problem and address to avoid future erosion |

SQIB-3.7.1 Major Sediment Removal

Major sediment removal consists of removal of large quantities of sediment or removal of sediment from vegetated areas. Care shall be given when removing large quantities of sediment and sediment deposited in vegetated areas. Large quantities of sediment need to be carefully removed, transported and disposed of. Vegetated areas need special care to ensure design volumes and grades are preserved.

*Frequency* – Nonroutine – Repair as needed based upon inspections.

SQIB-3.7.2 Major Erosion Repair

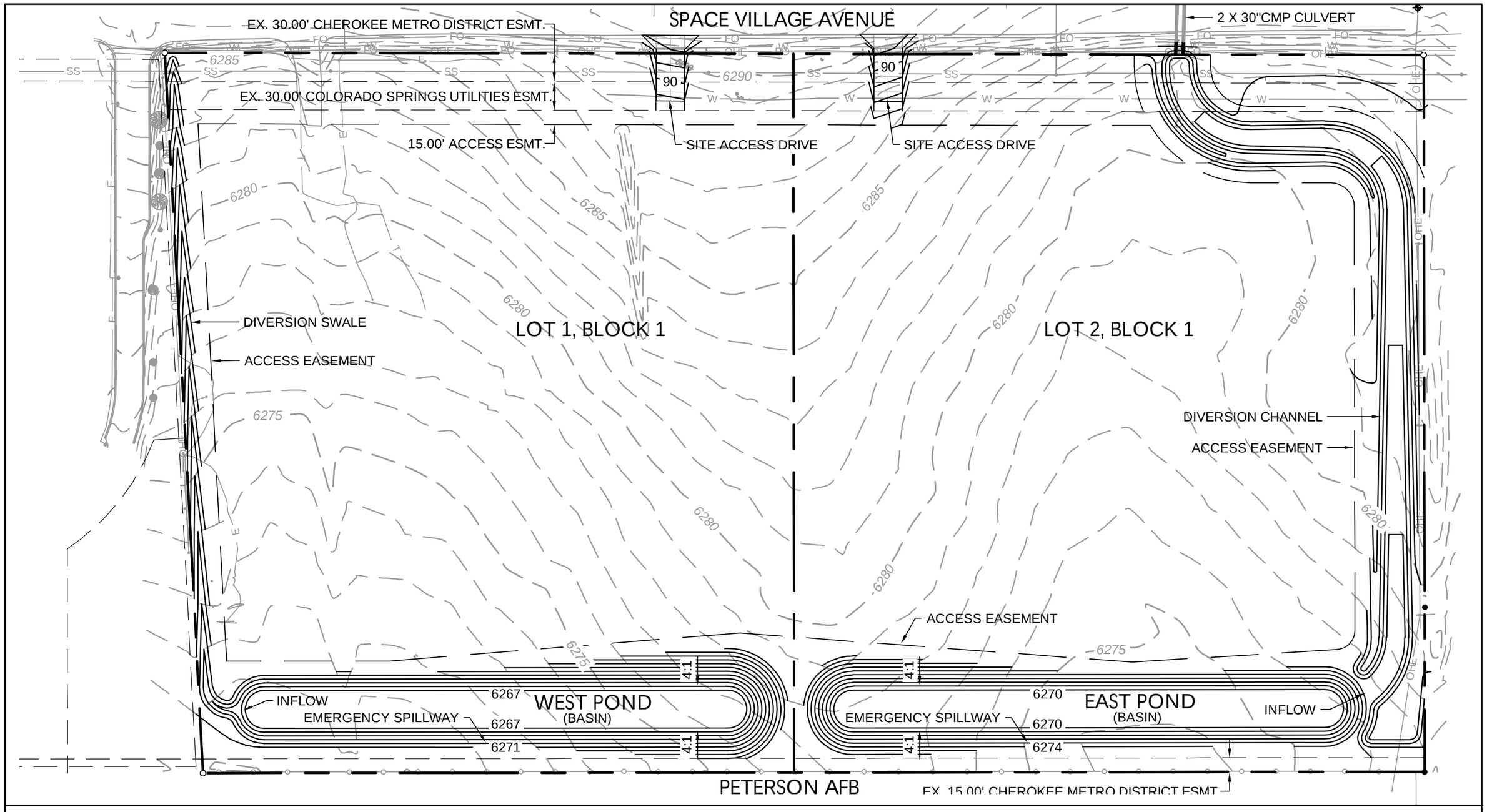
Major erosion repair consists of filling and revegetating areas of severe erosion. Determining the cause of the erosion as well as correcting the condition that caused the erosion should also be part of the erosion repair. Care should be given to ensure design grades and volumes are preserved.

*Frequency* – Nonroutine – Repair as needed based upon inspections.

Reference:

**This manual is adapted from SEMSWA and the Town of Parker, Colorado,** *STORMWATER PERMANENT BEST MANAGEMENT PRACTICES (PBMP) LONG-TERM OPERATION AND MAINTENANCE MANUAL*, October 2004

For additional resources and contact info, visit the EPC Stormwater website:
https://publicworks.elpasoco.com/stormwater/




STORMWATER FACILITY MAP

SPACE VILLAGE FILING NO. 4
EL PASO COUNTY, COLORADO
SCALE: 1" = 100'
DATE: AUGUST 2022

NORTH

LEGEND

- PROPERTY LINE
- EASEMENT LINE
- 6275 EXIST. MAJOR CONTOUR
- EXIST. MINOR CONTOUR
- EXIST. CURB AND GUTTER
- 75 PROP. CONTOUR
- EXIST. FENCE
- FO EXIST. FIBER OPTIC
- T EXIST. TELEPHONE
- OHE EXIST. OVERHEAD ELECTRIC
- SS EXIST. SANITARY SEWER
- W EXIST. WATERLINE
- G EXIST. GAS LINE
- E EXIST. ELECTRIC

# Post Construction Stormwater Management Applicability Evaluation Form

This form is to be used by the Engineer of Record to evaluate applicable construction activities to determine if the activities are eligible for an exclusion to permanent stormwater quality management requirements. Additionally Part III of the form is used to identify and document which allowable control measure design standard is used for the structure.

| **Part I. Project Information** | |
|---|---|
| **1. Project Name:** | |
| **2. El Paso Coun** Revised. MS227 | **3. ESQCP #:** |
| **4. Project Location:** | **Project Location in MS4 Permit Area (Y or N):** |
| **5. Project Description:** | |
| If project is located within the El Paso County MS4 Permit Area, please provide copy of this completed form to the Stormwater Quality Coordinator for reporting purposes; and save completed form with project file. | |

Select "No" for all exclusions Revised.

**Part II. Exclusion Evaluation:** Determine if Post-Construction Stormwater Management exclusion criteria are met. Note: Questions A thru K directly correlate to the MS4 permit Part I.E.4.a.i (A) thru (K). If Yes, to any of the following questions, then mark Not Applicable in Part III, Question 2.

| Questions | Yes | No | Not Applicable | Notes: |
|---|---|---|---|---|
| A. Is this project a "Pavement Management Site" as defined in Permit Part I E.4.a.i.(A)? | | | | This exclusion applies to "roadways" only. Areas used primarily for parking or access to parking are not included. |
| B. Is the project "Excluded Roadway Development"? | | | | |
| • Does the site add less than 1 acre of paved area per mile? | | | | |
| • Does the site add 8.25 feet or less of paved width at any location to the existing roadway? | | | | |
| C. Does the project increase the width of the existing roadway by less than 2 times the existing width? | | | | For redevelopment of existing roadways, only the area of the existing roadway is excluded from post-construction requirements when the site does not increase the width by two times or more. ***This exclusion only excludes the original roadway area it does NOT apply to entire project.*** |
| D. Is the project considered an aboveground and Underground Utilities activity? | | | | Activity can NOT permanently alter the terrain, ground cover or drainage patterns from those present prior to the activity |
| E. Is the project considered a "Large Lot Single-Family Site"? | | | | Must be a single-residential lot or agricultural zoned land, ≥ 2.5 acres per dwelling and total lot impervious area < 10 percent. |

| Questions (cont'd) | Yes | No | Not Applicable | Notes |
|---|---|---|---|---|
| F. Do Non-Residential or Non-Commercial Infiltration Conditions exist?<br>Post-development surface conditions do not result in concentrated stormwater flow or surface water discharge during an 80th percentile stormwater runoff event. | | | | Exclusion does not apply to residential or commercial sites for buildings.<br>A site specific study is required and must show: rainfall and soil conditions; allowable slopes; surface conditions; and ratios of imperviousness area to pervious area. |
| G. Is the project land disturbance to Undeveloped Land where undeveloped land remains undeveloped following the activity? | | | | Project must be on land with no human made structures such as buildings or pavement. |
| H. Is the project a Stream Stabilization Site? | | | | Standalone stream stabilization projects are excluded. |
| I. Is the project a bike or pedestrian trail? | | | | Bike lanes for roadways are not included in this exclusion, but may qualify if part of larger roadway activity is excluded in A, B or C above. |
| J. Is the project Oil and Gas Exploration? | | | | Activities and facilities associated with oil and gas exploration are excluded. |
| K. Is the project in a County Growth Area? | | | | Note, El Paso County does not apply this exclusion.<br>All Applicable Construction Activity in El Paso County must comply the Post-Construction Stormwater Management criteria. |

| Part III. Post Construction (Permanent) Stormwater Control Determination | | |
|---|---|---|
| **Questions** | **Yes** | **No** |
| 1. Is project an Applicable Construction Activity? Revised. | X | |
| 2. Do any of the Exclusions (A-K in Part II) apply? | | X |
| If the project is an Applicable Construction Activity and no Exclusions apply then Post-Construction (Permanent) Stormwater Management is required. Revised.<br>Complete the applicable sections of Part IV below and then coordinate signatures for form and place in project file.<br>If the project is not an Applicable Construction Activity, or Exclusion(s) apply then Post-Construction (Permanent) Stormwater Management is NOT required. Coordinate signatures for form and place in project file. | | |

| Part IV: Onsite PWQ Requirements, Documentation and Considerations | Yes | No |
|---|---|---|
| 1. Check which Design Standard(s) the project will utilize. Standards align with Control Measure Requirements identified in permit Part I.E.4.a.iv. | | |
| A. Water Quality Capture Volume (WQCV) Standard | X | |
| B. Pollutant Removal/80% Total Suspended Solids Removal (TSS) | | X |
| C. Runoff Reduction Standard | | X |
| D. Applicable Development Site Draining to a Regional WQCV Control Measure | | X |
| E. Applicable Development Site Draining to a Regional WQCV Facility | | X |
| F. Constrained Redevelopment Sites Standard | | X |
| G. Previous Permit Term Standard | | X |
| 2. Will any of the project permanent stormwater control measure(s) be maintained by another MS4?<br>If Yes, you must obtain a structure specific maintenance agreement with the other MS4 prior to advertisement. | | X |
| 3. Will any of the project permanent stormwater control measures be maintained by a private entity or quasi-governmental agency (e.g. HOA or Special District, respectively)?<br>If Yes, a Private Detention Basin/Stormwater Quality Best Management Practice Maintenance Agreement and Easement must be recorded with the El Paso County Clerk and Recorder. | X | |

Revised.

| Part V Notes (attach an additional sheet if you need more space) |
|---|
| We require all sites to adhere to our MS4 Permit and ECM/DCM requirements regardless of whether or not they are in the MS4 Permit Area. So please complete the form above and revise this Part V Notes section accordingly. I have filled out Part IV above how it likely should be completed. |

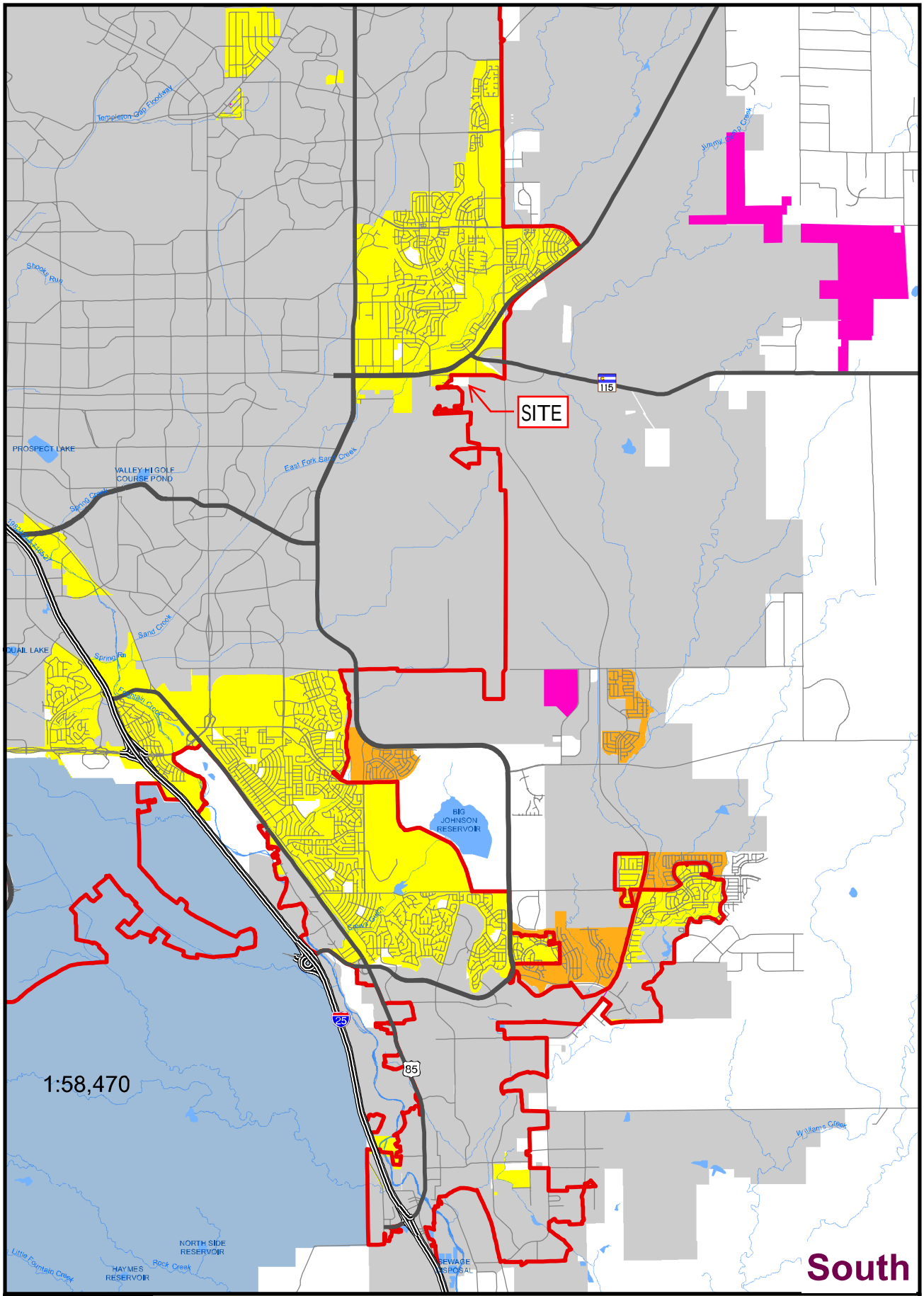
Revised.

Project design to include the project design, construction plans, drainage report, specifications, and maintenance and access agreements as required. The engineering, drainage considerations and information used to complete these documents is complete, true, and accurate to the best of my belief and knowledge.

Signature and Stamp of Engineer of Record _____ Date _____

Post-Construction Stormwater Management Applicability Form has been reviewed and the project design, construction plans, drainage report, specifications, and maintenance and access agreements as required, have been reviewed for compliance with the Post Construction Stormwater Management process and MS4 Permit requirements.

Signature of El Paso County Project Engineer _____ Date _____




## 2022 El Paso County MS4 Permit Area - Urban Areas
## CDPS Stormwater Management Program
## CDPS Permit No. COR-090011

**Legend**

- 2022 Existing MS4 Permit Area
- 2020 County Growth Areas
- 2010 Census Urban Area
- Incorporated Areas
- 2021 Incorp Area Changes

**URBAN AREA**
**South Map**

REVISED DUE TO ANNEXATIONS THRU DECEMBER 2021

Program area boundary based on 2010 Census Urbanized Areas from U.S. Census Bureau cartographic products online. Adjustments to fit El Paso County basemap coordinates and judgments on excluding small low density areas were made by El Paso County Staff.

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**PRIVATE DETENTION BASIN /**

**STORMWATER QUALITY BEST MANAGEMENT PRACTICE**

**MAINTENANCE AGREEMENT AND EASEMENT**

This PRIVATE DETENTION BASIN / STORMWATER QUALITY BEST MANAGEMENT PRACTICE MAINTENANCE AGREEMENT AND EASEMENT (Agreement) is made by and between EL PASO COUNTY by and through THE BOARD OF COUNTY COMMISSIONERS OF EL PASO COUNTY, COLORADO (Board or County) and Hampton Partners LLC, a Colorado limited liability company (Owner). The above may occasionally be referred to herein singularly as "Party" and collectively as "Parties."

Recitals

A. WHEREAS, Owner is the owner of certain real estate (the Property) in El Paso County, Colorado, which Property is legally described in Exhibit A attached hereto and incorporated herein by this reference; and

B. WHEREAS, Owner desires to plat on the Property a subdivision to be known as Appaloosa Hwy 24 Subdivision Fil. No. 1A; and

C. WHEREAS, the development of this Property will substantially increase the volume of water runoff and will decrease the quality of the stormwater runoff from the Property, and, therefore, it is in the best interest of public health, safety and welfare for the County to condition approval of this land use on Owner's promise to construct adequate drainage, water runoff control facilities, and stormwater quality structural Best Management Practices ("BMPs") for the land use; and

D. WHEREAS, Chapter 8, Section 8.4.5 of the El Paso County Land Development Code, as periodically amended, promulgated pursuant to Section 30-28-133(1), Colorado Revised Statutes (C.R.S.), requires the County to condition approval of all subdivisions on a developer's promise to so construct adequate drainage, water runoff control facilities, and BMPs in subdivisions; and

E. WHEREAS, the Drainage Criteria Manual, Volume 2, as amended by Appendix I of the El Paso County Engineering Criteria Manual (ECM), as each may be periodically amended, promulgated pursuant to the County's Colorado Discharge Permit System General Permit (MS4 Permit) as required by Phase II of the National Pollutant Discharge Elimination System (NPDES), which MS4 Permit requires that the County take measures to protect the quality of stormwater from sediment and other contaminants, requires subdividers, developers, landowners, and owners of facilities located in the County's rights-of-way or easements to provide adequate permanent stormwater quality BMPs with new development or significant redevelopment; and

F. WHEREAS, Section 2.9 of the El Paso County Drainage Criteria Manual provides for a developer's promise to maintain a subdivision's drainage facilities in the event the County does not assume such responsibility; and

G. WHEREAS, developers in El Paso County have historically chosen water runoff detention basins as a means to provide adequate drainage and water runoff control in subdivisions,

Revised

Revise to "two (2)"

which basins, while effective, are less expensive for developers to construct than other methods of providing drainage and water runoff control; and

H. WHEREAS, Owner desires to construct for the subdivision one (1) detention basin/stormwater quality BMP(s) ("detention basin/BMP(s)") as the means for providing adequate drainage and stormwater runoff control and to meet requirements of the County's MS4 Permit, and to provide for operating, cleaning, maintaining and repairing such detention basin/BMP(s); and

I. WHEREAS, Owner desires to construct the detention basin/BMP(S) on the property that will be platted as Lot 3, as indicated on the final plat of the subdivision and as set forth on Exhibit B, attached hereto; and

Revise to Lot 1 & Lot 2 of Block 1

Revised.

J. WHEREAS, Owner shall be charged with the duties of operating, maintaining and repairing the detention basin/BMP(s) on the Property and

K. WHEREAS, it is the County's experience that developers and property owners historically have not properly cleaned and otherwise not properly maintained and repaired these detention basins/BMPs, and that these detention basins/BMPs, when not so properly cleaned, maintained, and repaired, threaten the public health, safety and welfare; and

L. WHEREAS, the County, in order to protect the public health, safety and welfare, has historically expended valuable and limited public resources to so properly clean, maintain, and repair these detention basins/BMPs when developers and property owners have failed in their responsibilities, and therefore, the County desires the means to recover its costs incurred in the event the burden falls on the County to so clean, maintain and repair the detention basin/BMP(s) serving this land use due to the Owner's failure to meet its obligations to do the same; and

M. WHEREAS, the County conditions approval of this land use on the Owner's promise to so construct the detention basin/BMP(s), and further conditions approval on the promise of the Owner and its successors or assigns to reimburse the County in the event the burden falls upon the County to so clean, maintain and/or repair the detention basin/BMP(s) serving this land use; and

N. WHEREAS, the County could condition land use approval on the Owner's promise to construct a different and more expensive drainage, water runoff control system and BMPs than those proposed herein, which more expensive system would not create the possibility of the burden of cleaning, maintenance and repair expenses falling on the County; however, the County is willing to forego such right upon the performance of Owner's promises contained herein; and

O. WHEREAS, the County, in order to secure performance of the promises contained herein, conditions approval of this land use upon the Owner's grant herein of a perpetual Easement over the Property for the purpose of allowing the County to periodically access, inspect, and, when so necessary, to clean, maintain and/or repair the detention basin/BMP(s); and

## Agreement

NOW, THEREFORE, in consideration of the mutual Promises contained herein, the sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. Incorporation of Recitals: The Parties incorporate the Recitals above into this Agreement.

2. Covenants Running with the Land: Owner agrees that this entire Agreement and the performance thereof shall become a covenant running with the land, which land is legally described in Exhibit A attached hereto, and that this entire Agreement and the performance thereof shall be binding upon itself, its successors and assigns.

Revise to "two (2)"

Revised.

3. Construction: Owner shall construct on the Property described in Exhibit B attached hereto and incorporated herein by this reference, one (1) detention basin/BMP(s). Owner shall not commence construction of the detention basin/BMP(s) until El Paso County Planning and Community Development (PCD) has approved in writing the plans and specifications for the detention basin/BMP(s) and this Agreement has been signed by all Parties and returned to the PCD. Owner shall complete construction of the detention basin/BMP(s) in substantial compliance with the County-approved plans and specifications for the detention basin/BMP(s). Failure to meet these requirements shall be a material breach of this Agreement, and shall entitle the County to pursue any remedies available to it at law or in equity to enforce the same. Construction of the detention basin/BMP(s) shall be substantially completed within one (1) year (defined as 365 days), which one year period will commence to run on the date the approved plat of this subdivision is recorded in the records of the El Paso County Clerk and Recorders. Rough grading of the detention basin/BMP(s) must be completed and inspected by El Paso County Planning and Community Development prior to commencing road construction.

In the event construction is not substantially completed within the one (1) year period, then the County may exercise its discretion to complete the project, and shall have the right to seek reimbursement from the Owner and its successors and assigns, for its actual costs and expenses incurred in the process of completing construction. The term actual costs and expenses shall be liberally construed in favor of the County, and shall include, but shall not be limited to, labor costs, tool and equipment costs, supply costs, and engineering and design costs, regardless of whether the County uses its own personnel, tools, equipment and supplies, etc. to correct the matter. In the event the County initiates any litigation or engages the services of legal counsel in order to enforce the Provisions arising herein, the County shall be entitled to its damages and costs, including reasonable attorney fees, regardless of whether the County contracts with outside legal counsel or utilizes in-house legal counsel for the same.

4. Maintenance: The Owner agrees for itself and its successors and assigns, that it will regularly and routinely inspect, clean and maintain the detention basin/BMP(s), and otherwise keep the same in good repair, all at its own cost and expense. No trees or shrubs that will impair the structural integrity of the detention basin/BMP(s) shall be planted or allowed to grow on the detention basin/BMP(s).

5. Creation of Easement: Owner hereby grants the County a non-exclusive perpetual easement upon and across the Property described in Exhibit B. The purpose of the easement is to allow the County to access, inspect, clean, repair and maintain the detention basin/BMP(s); however, the creation of the easement does not expressly or implicitly impose on the County a duty to so inspect, clean, repair or maintain the detention basin/BMP(s).

6. County's Rights and Obligations: Any time the County determines, in the sole exercise of its discretion, that the detention basin/BMP(s) is not properly cleaned, maintained and/or otherwise

kept in good repair, the County shall give reasonable notice to the Owner and its successors and assigns, that the detention basin/BMP(s) needs to be cleaned, maintained and/or otherwise repaired. The notice shall provide a reasonable time to correct the problem(s). Should the responsible parties fail to correct the specified problem(s), the County may enter upon the Property to so correct the specified problem(s). Notice shall be effective to the above by the County's deposit of the same into the regular United States mail, postage pre-paid. Notwithstanding the foregoing, this Agreement does not expressly or implicitly impose on the County a duty to so inspect, clean, repair or maintain the detention basin/BMP(s).

7. Reimbursement of County's Costs / Covenant Running With the Land: The Owner agrees and covenants, for itself, and its successors and assigns, that it will reimburse the County for its costs and expenses incurred in the process of completing construction of, cleaning, maintaining, and/or repairing the detention basin/BMP(s) pursuant to the provisions of this Agreement.

The term "actual costs and expenses" shall be liberally construed in favor of the County, and shall include, but shall not be limited to, labor costs, tools and equipment costs, supply costs, and engineering and design costs, regardless of whether the County uses its own personnel, tools, equipment and supplies, etc. to correct the matter. In the event the County initiates any litigation or engages the services of legal counsel in order to enforce the provisions arising herein, the County shall be entitled to its damages and costs, including reasonable attorney's fees, regardless of whether the County contracts with outside legal counsel or utilizes in-house legal counsel for the same.

8. Agreement Monitored by El Paso County Planning and Community Development and/or El Paso County Department of Public Works: Any and all actions and decisions to be made hereunder by the County shall be made by the Director of the El Paso County Planning and Community Development and/or the Director of the El Paso County Department of Public Works. Accordingly, any and all documents, submissions, plan approvals, inspections, etc. shall be submitted to and shall be made by the Director of the Planning and Community Development and/or the Director of the El Paso County Department of Public Works.

9. Indemnification and Hold Harmless: To the extent authorized by law, Owner agrees, for itself and its successors and assigns, that it will indemnify, defend, and hold the County harmless from any and all loss, costs, damage, injury, liability, claim, lien, demand, action and causes of action whatsoever, whether at law or in equity, arising from or related to their respective intentional or negligent acts, errors or omissions or that of their agents, officers, servants, employees, invitees and licensees in the construction, operation, inspection, cleaning (including analyzing and disposing of any solid or hazardous wastes as defined by State and/or Federal environmental laws and regulations), maintenance, and repair of the detention basin/BMP(s), and such obligation arising under this Paragraph shall be joint and several. Nothing in this Paragraph shall be deemed to waive or otherwise limit the defense available to the County pursuant to the Colorado Governmental Immunity Act, Sections 24-10-101, *et seq*. C.R.S., or as otherwise provided by law.

10. Severability: In the event any Court of competent jurisdiction declares any part of this Agreement to be unenforceable, such declaration shall not affect the enforceability of the remaining parts of this Agreement.

11. Third Parties: This Agreement does not and shall not be deemed to confer upon or grant to any third party any right to claim damages or to bring any lawsuit, action or other proceeding against

either the County, the Owner, or their respective successors and assigns, because of any breach hereof or because of any terms, covenants, agreements or conditions contained herein.

12. Solid Waste or Hazardous Materials: Should any refuse from the detention basin/BMP(s) be suspected or identified as solid waste or petroleum products, hazardous substances or hazardous materials (collectively referred to herein as "hazardous materials"), the Owner shall take all necessary and proper steps to characterize the solid waste or hazardous materials and properly dispose of it in accordance with applicable State and/or Federal environmental laws and regulations, including, but not limited to, the following: Solid Wastes Disposal Sites and Facilities Acts, §§ 30-20-100.5 – 30-20-119, C.R.S., Colorado Regulations Pertaining to Solid Waste Disposal Sites and Facilities, 6 C.C.R. 1007-2, *et seq*., Solid Waste Disposal Act, 42 U.S.C. §§ 6901-6992k, and Federal Solid Waste Regulations 40 CFR Ch. I. The County shall not be responsible or liable for identifying, characterizing, cleaning up, or disposing of such solid waste or hazardous materials. Notwithstanding the previous sentence, should any refuse cleaned up and disposed of by the County be determined to be solid waste or hazardous materials, the Owner, but not the County, shall be responsible and liable as the owner, generator, and/or transporter of said solid waste or hazardous materials.

13. Applicable Law and Venue: The laws, rules, and regulations of the State of Colorado and El Paso County shall be applicable in the enforcement, interpretation, and execution of this Agreement, except that Federal law may be applicable regarding solid waste or hazardous materials. Venue shall be in the El Paso County District Court.

IN WITNESS WHEREOF, the Parties affix their signatures below.

Executed this _____ day of _____, 20___, by:

OWNER:

Hampton Partners LLC
A Colorado limited liability company

By: _____
, Manager

STATE OF COLORADO )
) ss
COUNTY OF _____ )

The foregoing instrument was acknowledged before me this _____ day of _____,

20___, by _____, Manager of Hampton Partners LLC

Witness my hand and official seal.

My commission expires: _____

_____

Notary Public

Executed this _____ day of _____, 20___, by:

BOARD OF COUNTY COMMISSIONERS
OF EL PASO COUNTY, COLORADO

By: _____

Craig Dossey, Executive Director
Planning and Community Development
Authorized signatory pursuant to LDC

The foregoing instrument was acknowledged before me this _____ day of _____, 20___, by_____, Executive Director of Planning and Community Development of El Paso County, Colorado.

Witness my hand and official seal.

My commission expires: _____

_____

Notary Public

Approved as to Content and Form:

_____
Assistant County Attorney

## Exhibit A

**Legal Description**

Lot 1, Block 1, Space Village Filing No. 4, El Paso County, Colorado.

## Exhibit B

**Legal Description**

Lot 2, Block 1, Space Village Filing No. 4, El Paso County, Colorado.

3275 Akers Drive
Colorado Springs, CO 80922
Phone 719-520-6460
Fax 719-520-6879
www.elpasoco.com

Remove checklist from SWMP doc.

Removed.

# EL PASO COUNTY
# STORMWATER MANAGEMENT PLAN CHECKLIST

EPC Project Number:

Revised: October 2021

| | | Applicant | EPC |
|---|---|---|---|
| **1. STORMWATER MANAGEMENT PLAN** (in the "Applicant" column specify the page number for each item) | | | |
| 1 | Applicant (owner/designated operator), SWMP Preparer, Qualified Stormwater Manager, and Contractor Information. (On cover/title sheet) | 1 | |
| 2 | Table of Contents | i | |
| 3 | Site description and location to include: vicinity map with nearest street/crossroads description | 1 | |
| 4 | Narrative description of construction activities proposed (e.g., may include clearing and grubbing, temporary stabilization, road grading, utility / storm installation, final grading, final stabilization, and removal of temporary control measures) | 3 | |
| 5 | Phasing plan – may require separate drawings indicating initial, interim, and final site phases for larger projects. Provide "living maps" that can be revised in the field as conditions dictate | 15 | |
| 6 | Proposed sequence for major activities: Provide a construction schedule of anticipated starting and completion dates for each stage of land-disturbing activity depicting conservation measures anticipated, including the expected date on which the final stabilization will be completed | 15 | |
| 7 | Estimates of the total site area and area to undergo disturbance; current area of disturbance must be updated on the SWMP as changes occur | 3 | |
| 8 | Soil erosion potential and impacts on discharge that includes a summary of the data used to determine soil erosion potential | 2 | |
| 9 | A description of existing vegetation at the site and percent ground cover and method used to determine ground cover | 2 | |
| 10 | Location and description of all potential pollution sources including but not limited to: disturbed and stored soils; vehicle tracking; management of contaminated soils; loading and unloading operations; outdoor storage of materials; vehicle and equipment maintenance and fueling; significant dust generating process; routine maintenance activities involving fertilizers, pesticides, herbicides, detergents, fuels, solvents, oils, etc.; on-site waste management; concrete truck/equipment washing; dedicated asphalt, concrete batch plants and masonry mixing stations; non-industrial waste such as trash and portable toilets | 6 | |
| 11 | Material handling to include spill prevention and response plan and procedures | 14 | |
| 12 | Spill prevention and pollution controls for dedicated batch plants | 7 | |
| 13 | Other SW pollutant control measures to include waste disposal and off-site soil tracking | 13 | |
| 14 | Location and description of any anticipated allowable non-stormwater discharge (ground water, springs, irrigation, discharge covered by CDPHE Low Risk Guidance, etc.) | 22 | |
| 15 | Name(s) of ultimate receiving waters; size, type and location of stormwater outfall or storm sewer system discharge | 4 | |
| 16 | Description of all stream crossings located within the project area or statement that no streams cross the project area | 3 | |

3275 Akers Drive
Colorado Springs, CO 80922
Phone 719-520-6460
Fax 719-520-6879
www.elpasoco.com

# EL PASO COUNTY
# STORMWATER MANAGEMENT PLAN CHECKLIST

EPC Project Number:

Revised: October 2021

| | | Applicant | EPC |
|---|---|---|---|
| 17 | SWMP Map to include: | | |
| 17a | construction site boundaries | C905 | |
| 17b | flow arrows to depict stormwater flow directions | C905 | |
| 17c | all areas of disturbance | C905 | |
| 17d | areas of cut and fill | C905 | |
| 17e | areas used for storage of building materials, soils (stockpiles) or wastes | C905 | |
| 17f | location of any dedicated asphalt / concrete batch plants | N/A | |
| 17g | location of all structural control measures | C905 | |
| 17h | location of all non-structural control measures | C905 | |
| 17i | springs, streams, wetlands and other surface waters, including areas that require maintenance of pre-existing vegetation within 50 feet of a receiving water | 3 | |
| 18 | Narrative description of all structural control measures to be used. Modifications to EPC standard control measures must meet or exceed County-approved details | 7 | |
| 19 | Description of all non-structural control measures to be used including seeding, mulching, protection of existing vegetation, site watering, sod placement, etc. | 10 | |
| 20 | Technical drawing details for all control measure installation and maintenance; custom or other jurisdiction's details used must meet or exceed EPC standards | C910 | |
| 21 | Procedure describing how the SWMP is to be revised | 5 | |
| 22 | Description of Final Stabilization and Long-term Stormwater Quality (describe nonstructural and structural measures to control SW pollutants after construction operations have been completed, including detention, water quality control measure etc.) | 20 | |
| 23 | Specification that final vegetative cover density is to be 70% of pre-disturbed levels | 20 | |
| 24 | Outline of permit holder inspection procedures to install, maintain, and effectively operate control measures to manage erosion and sediment | 17 | |
| 25 | Record keeping procedures identified to include signature on inspection logs and location of SWMP records on-site | 18 | |
| 26 | If this project relies on control measures owned or operated by another entity, a documented agreement must be included in the SWMP that identifies location, installation and design specifications, and maintenance requirements and responsibility of the control measure(s) | 17 | |
| | **Please note: all items above must be addressed. If not applicable, explain why, simply identifying "not applicable" will not satisfy CDPHE requirement of explanation.** | | |
| **2. ADDITIONAL REPORTS/PERMITS/DOCUMENTS** | | | |
| a | Grading and Erosion Control Plan (signed) | App. E | |
| b | Erosion and Stormwater Quality Control Permit (ESQCP) (signed) | App. C | |

3275 Akers Drive
Colorado Springs, CO 80922
Phone 719-520-6460
Fax 719-520-6879
www.elpasoco.com

# EL PASO COUNTY
# STORMWATER MANAGEMENT PLAN CHECKLIST

EPC Project Number:

Revised: October 2021

| | | Applicant | EPC |
|---|---|---|---|
| **3. APPLICANT COMMENTS** | | | |
| a | | | |
| b | | | |
| c | | | |
| **4. CHECKLIST REVIEW CERTIFICATIONS** | | | |
| a | Applicant:<br>The Stormwater Management Plan was prepared under my direction and supervision and is correct to the best of my knowledge and belief. Said Plan has been prepared according to the criteria established by the County and State for Stormwater Management Plans.<br>Digitally signed by Jay M. Newell<br>SN: C=US CN=Jay M. Newell O="Sterling Design Associates, llc" E=jay@sterlingdesignassociates.com<br>Date: 2022.07.25 09:40:48 -06'00'<br>August 2022<br>Engineer of Record and/or Qualified Stormwater Manager Signature — Date | | |
| b | Review Engineer:<br>The Stormwater Management Plan was reviewed and found to meet the checklist requirements except where otherwise noted or allowed by an approved deviation request.<br>Review Engineer — Date | | |

# STORMWATER MANAGEMENT PLAN / EROSION & STORMWATER QUALITY CONTROL PLAN

# SPACE VILLAGE FILING NO. 4

EL PASO COUNTY
STATE OF COLORADO

PREPARED FOR:

COMMERCIAL BUILDING SERVICES
7561 S. GRANT STREET, SUITE A-4
LITTLETON, COLORADO 80122
CONTACT: DAVID SPRATLEN
PHONE: 303.730.3001

PREPARED BY:

STERLING DESIGN ASSOCIATES, LLC
2009 W. LITTLETON BLVD. #300
LITTLETON, CO 80120
CONTACT: JAY M. NEWELL, PE
PHONE: 303.794.4727

AUGUST, 2022

Add text:

PCD Filing No.: MS227

Revised.

STERLING
DESIGN ASSOCIATES
Civil Engineers | Landscape Architects

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STERLING
DESIGN ASSOCIATES
Civil Engineers | Landscape Architects

Appendix A Vicinity Map
NRCS Web Soil Survey Soil Data Maps
SCS Soil Survey
Flood Insurance Rate Map

Appendix B Spill Prevention and Control Plan
Colorado Dept. of Public Health & Environment (CDPHE) Environmental Spill Reporting
Colorado Dept. of Public Health & Environment (CDPHE) Five Day Reporting Form

Appendix C Colorado Dept. of Public Health & Environment (CDPHE) CDPS Documents
- Colorado Environmental Online Services (CEOS) Help Guide
- CDPS COR400000 General Permit
- Low Risk Discharge Guidance – Discharges of Uncontaminated Groundwater to Land (WQP-27)

El Paso County Documents
- Erosion and Stormwater Quality Control Permit (ESQCP) Application
- Inspection Checklist – Grading, Erosion, and Stormwater Quality Controls

Appendix D Example Logs and Inspection Forms

Appendix E Site Maps (Grading and Erosion Control Plans)
Landscape Plan (Final Stabilization Plan)

STERLING
DESIGN ASSOCIATES
Civil Engineers | Landscape Architects

# OWNER STATEMENT

The Owner will comply with the requirements of the Erosion and Stormwater Quality Control Plan.

_____ _____

Signature Date

Remove.

Revised.

# I. CONTACTS

OWNER (CO-APPLICANT):

Hampton Partners
201 Fillmore St., Suite 201
Denver, Colorado 80206
Contact: Tucker Robinson
Phone: (303) 694-1085

GENERAL CONTRACTOR (CO-APPLICANT):

Commercial Building Services
7561 S. Grant St., Suite A-4
Littleton, Colorado 80122
Contact: David Spratlen
Phone: (303) 730-3001

SWMP ADMINISTRATOR:

Name: TBD
Address:
Contact:
Phone:

Also make a section for QSM info (leave sufficient blanks below the section heading if QSM is unknown at this time)

Added.

PLAN PREPARER:

Sterling Design Associates, LLC
2009 W. Littleton Blvd., Ste. 300
Littleton, Colorado 80120
Contact: Jay M. Newell, PE
Phone: (303) 794-4727 x203

Remove this sentence, that acronym is not correct. The ESQCP is our SW permit.

Removed.

# II. PROJECT DESCRIPTION

This Stormwater Management Plan (SWMP), simultaneously acting as the county's Erosion & Stormwater Quality Control Plan (ESQCP), is prepared to address the earth disturbing activities associated with construction of outdoor storage facilities on Space Village Filing No. 4, in El Paso County, Colorado. Wherever within this document or its associated Site Maps reference to the SWMP is made, it shall be understood to refer to the ESQCP and its associated plan(s) as well.

## A. LOCATION

Additional to the provided address above the site is further described as being situated in a portion of the Northwest quarter of Section 17, Township 14 South, Range 65 West of the Sixth Principal Meridian, County of El Paso, State of Colorado. Relative to local public roadways, Space Village Avenue is immediate to the site's north property line; Space Village Avenue's intersection with

Peterson Boulevard is approximately one-quarter mile to the west; and its intersection with Marksheffel Road is approximately one-half mile to the east. Primary parcel access is off Space Village Avenue at an existing dirt access at the site's northwest corner.

SITE LOCATION: 38º 50' 17" N Latitude
104º 41' 38" W Longitude

A vicinity map is provided as Appendix A attached hereto.

## B. EXISTING CONDITION

A portion of the site has been most recently used as an outdoor storage area. This portion is largely denuded of vegetation. The remainder of the site has remained vacant and covered with native grasses and a handful of widely spaced trees.

SITE VEGETATIVE COVER, RELATIVE TO ENTIRE SITE: 70%
DENSITY OF EXISTING VEGETATIVE COVER: 80%

Both the extents and density of existing vegetation were determined through a review of aerial imagery available online dated July, 2021.

SOIL DATA - The United Stated Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Web Soil Survey, identifies the underlying soils as being Blakeland loamy sand, 1 to 9 percent slopes (8) with a Hydrologic Soil Group A rating. Refer to prints in Appendix A for reference. The USDA, Soil Conservation Service (SCS), *Soil Survey of El Paso County Area, Colorado*, of 1981 states that typically this soil's "…surface layer is dark grayish brown loamy sand about 11 inches thick…" with a "…substratum, to a depth of 27 inches [that] is brown loamy sand [which] grades to pale brown sand that extends to a depth of 60 inches." This document also indicates the soil's "…hazard of erosion is moderate, and the hazard of soil blowing is severe." The survey describes the soil as "…deep, somewhat excessively drained…" with a permeability that is "rapid."

SITE DRAINAGE PATTERNS – There are two low areas and a ridge that generally divides the site into an east and west basin for drainage considerations. The terrain within the site generally falls at 1.0 to 4.5 percent grades conveying runoff as sheet flow from the north towards, if not onto, Peterson Air Force Base (PAFB) to the south. Likely due to the highly pervious soil(s), there is no significant indication of continuous stormwater flows either in low flow channels or rill on the site. Discharge of runoff from the site is likely into the ground, as conveyance of flow onto (PAFB) is not readily evident. A dual 30-inch CMP culvert under Space Village Avenue discharges offsite runoff onto the site approximately 260-feet from the east property line. There is a shallow area onsite where, it is assumed, most runoff events have ponded and infiltrated as there is no evidence of a significant low flow channel or rill that would be caused by frequent subjection to flowing water. Any discharge to PAFB would be conveyed by the base's topography and collected by the PAFB Municipal Separate Storm Sewer System (MS4).

FLOODPLAIN REVIEW – This site lies in an area identified as Zone X, "areas determined to be outside the 0.2% annual chance floodplain" as shown on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for El Paso County, Colorado and Incorporated Areas,

Map Number 08041C0754G with an effective date of December 7, 2018. Copies of the referenced FIRM can be found in the Appendix A.

No named streams cross the site.

### C. Adjacent Properties

The property to the west is, except for a partial access road, an undeveloped portion of commercial Lot 1, Cowperwood SAIC. To the south is PAFB. To the east is open space belonging to the City of Colorado Springs. Several commercial developments exist north of the adjacent Space Village Avenue R.O.W. including Winwater's Colorado Springs wholesale yard and warehouse, Storage Sense's Colorado Springs/Peterson Air Force Base interior and exterior storage facilities, A Better R.V. Storage's exterior and covered storage facilities, and various other smaller retail, office, and related uses.

Offsite runoff tributary to the site other than by means of the dual CMP culvert described previously is minimal and mainly from the south half of the Space Village Avenue R.O.W., as the drainage patterns of the adjacent properties generally direct runoff away from or around the site. An approximately 6.8 acre area north of Space Village Avenue, separate from that area tributary to the dual culvert, could contribute discharge over the road and onto the site's western property boundary in very large rain events. There is no evidence this has occurred; however, there is no apparent means for water accumulating at that location to discharge other than into the ground or over the road and onto the site.

### D. Proposed Construction

Development of the site will, to the greatest extent practical, retain all peripheral improvements. The subject site, herein described as Space Village Filing No. 4, is identified as being 22.8 acres on the *ALTA/NSPS Land Title Survey* prepared by Altura Land Consultants and dated April 28, 2022 (ALTA). As a construction site it is slightly larger due to the inclusion of minor amounts of peripheral transition work as well as off-site access drives.

| | |
|---|---|
| Parcel Limits: | 22.8 acre |
| Construction Site Boundary: | 23.0 acre |
| Disturbance Area Estimate: | 23.0 acre |

There are no proposed structures. Paving (concrete, asphalt, or similar) for access will account for 4,655 square feet. Paving (gravel, asphalt millings, recycled concrete, or similar) will account for 720,815 square feet. The remaining 276,410 square feet will be landscaping including a mix of native seed, mulch, trees, and/or shrubs. Construction activities (described in more detail below) are anticipated to include clearing and grubbing, temporary stabilization, final grading, final stabilization, and removal of temporary control measures.

Post Construction Drainage – Site drainage patterns are not anticipated to change with development of the site as a storage yard. Runoff will be conveyed as surface flow to one of two proposed detention and stormwater quality facilities.

### E. Receiving Water

Drainage conveyance is collected within one of two proposed onsite detention and stormwater quality facilities. These facilities are designed as infiltration basins with no offsite surface discharge. In the event that the facilities are full and operating under emergency conditions, the facilities' southern side berms will act as level spreaders, dispersing runoff as sheet flow to PAFB comparable to the historic condition. Any discharge to PAFB would be conveyed by the base's topography and collected by the PAFB MS4 which is tributary to East Fork Sand Creek.

Discharge Location: 38° 49' 49" N Latitude
104° 42' 49" W Longitude

East Fork Sand Creek is tributary to Sand Creek approximately 2 miles downstream. Sand Creek is tributary to Fountain Creek approximately 3.2 miles downstream and southwest of the site. Fountain Creek is tributary to the Arkansas River approximately 43 miles downstream.

### F. Miscellaneous

To the best of our knowledge, research, and analysis we have found:

Earthwork Volumes - The site is anticipated to balance for earthwork and not generate significant amounts of import or export spoils assuming the excess cut material from the proposed detention and stormwater quality facilities can be spread evenly over the entire site. This may vary depending on final paving and foundation sections selected and provided for.

## III. SITE MAP COMPONENT

The accompanying Site Maps are an integral part of this SWMP and must be updated and revised as site conditions change. Information found thereon includes:

- Construction site boundaries;
- Existing and Proposed topography and flow arrows depicting drainage patterns;
- Areas of ground surface disturbance;
- Areas of cut and fill;
- Location of existing and proposed improvements;
- Storage areas for equipment, soil, building materials and waste;
- Location of construction activity structural and non-structural control measures;
- Locations where alternative temporary stabilization schedules apply, as applicable;
- Details and installation guides of construction activity structural and non-structural control measures, and;
- Location of streams and other surface waters as applicable.

All concrete and asphalt used during construction will be sourced from established, permanent suppliers and by dedicated batch plants.

# IV. SWMP ADMINISTRATOR

Identified in Section I, the SWMP Administrator is responsible for implementing, maintaining, and revising this SWMP throughout the life of the construction project, including final site stabilization and filing of the Notice of Termination and any county closeout documents.

Administrator duties include:

- Providing a detailed phasing and control measure implementation plan;
- Setting the Pre-Construction agenda;
- Scheduling and supervising the installation of structural and non-structural control measures;
- Scheduling and supervising control measure inspection and maintenance,
- Modifying the SWMP, including site maps, to reflect any additions or amendments necessary (see below);
- Documentation and collation of SWMP associated records;
- Providing required notifications for any bypasses, upsets, or spills;
- Educating site personnel on their roles and responsibilities relative to stormwater controls;
- Documenting final site stabilization and filing the Notice of Termination and any county closeout documents.

Amending the Plan – The SWMP Administrator is required to amend the Plan whenever any of the following situations occur:

- There is a change in the design, construction, operation, or maintenance of the site that requires implementation of a new or revised control measure:
- The SWMP proves ineffective in controlling pollutants in stormwater runoff in compliance with the permit conditions;
- Control measures identified in the SWMP are no longer necessary and are removed;
- Corrective actions are taken onsite that result in a change to the SWMP.

All changes must be dated and initialed by the SWMP Administrator.

The SWMP Administrator shall be selected by the General Contractor and a list of that individual's qualifications and certifications pertinent to construction erosion and sediment control shall be kept on file with this SWMP. The General Contractor is responsible to the Owner (Co-Permittee) for any deficiencies resulting from the failure of the SWMP Administrator to adequately perform their responsibilities.

# V. STORMWATER MANAGEMENT CONTROLS

Site and building construction disturbs the existing stabilized cover at a given location and increases the potential for erosion and the exposure of construction related pollutants to the environment. Listed below are the potential pollution sources anticipated to be associated with the construction and the control measures that should be installed and maintained coincident to each of those sources.

## A. Potential Pollution Sources

The following activities have the potential to adversely affect the quality of stormwater discharges from the construction site:

a. disturbed and stored soils;
b. vehicle tracking of sediments;
c. management of contaminated soils;
d. loading and unloading operations;
e. outdoor storage activities (erodible building materials, fertilizers, chemicals, etc.);
f. vehicle and equipment maintenance and fueling;
g. significant dust or particulate generating processes (e.g., saw cutting material, including dust);
h. routine maintenance activities involving fertilizers, pesticides, herbicides, detergents, fuels, solvents, oils, etc.;
i. on-site waste management practices (waste piles, liquid wastes, dumpsters);
j. concrete truck/equipment washing, including washing of the concrete truck chute and associated fixtures and equipment;
k. dedicated asphalt, concrete batch plants and masonry mixing stations;
l. non-industrial waste sources such as worker trash and portable toilets.

| Activity: | Potential Pollutant: | Location, Initiation and Duration Time Frame: |
|---|---|---|
| 1. Clearing and grubbing operation | sediment, dust | entire site; construction start with implication through final site stabilization |
| 2. Vehicle access and parking | sediment, dust, tracking; incidental (non-reporting level) fuel, oils, hydraulic fluid leaks | access drive and staging area; entire duration |
| 3. Operation of motorized construction equipment (loaders, fork lift, etc…) | sediment, dust, tracking; incidental (non-report level) fuel, oils, hydraulic fluid leaks and spills | entire site; entire duration |
| 4. Topsoil stripping and stockpiling | sediment, dust | existing landscape areas within the limits of construction and specified stockpile areas (ref. site maps); initial phase with implication through final site stabilization |
| 5. Demolition of the existing structures | general building materials construction waste | locations of existing structures; early with short duration (1 to 2 weeks expected) |
| 6. Motorized equipment maintenance and fueling | Incidental (non-report level) fuel (diesel, gas), oils, hydraulic fluid leaks and spills | staging area; entire duration |
| 7. Storage and loading/unloading of construction or maintenance materials with a water-soluble chemical component (i.e. squeegee, mortar, paint, glue, fertilizer, solvents, etc…) | oils, petroleum distillates, polymers, epoxies, metal oxides, perchloroethylene, arsenic, naptha, etc… | · staging area; initial, entire duration<br>· within new construction |

| Activity: | Potential Pollutant: | Location, Initiation and Duration Time Frame: |
|---|---|---|
| 8. Storage and loading/unloading of water neutral construction materials (i.e. forming, block, structural steel, base material, etc…) | sediment, dust | entire site; initial through remaining duration |
| 9. Routine site maintenance involving fertilizers, pesticides, detergents, solvents, etc…) | nitrogen, phosphorous, chlorinated hydrocarbons, arsenic, methylene chloride, pertroleum distillates | entire site; initial through remaining duration |
| 10. General paving, and site appurtenance construction | dust, tracking, liquid and solid wastes | entire site; entire duration |
| 11. Concrete construction and equipment cleaning | dust, limestone, sand, pH, chromium | entire site; interim (post overlot grading) through remaining duration |
| 12. General construction wastes | packing materials, materials excess/trim/spall, employee and/or office trash | entire site; entire duration |
| 13. Personnel sanitary facilities | bacteria, parasites, and viruses | staging area; entire duration |
| 14. Landscape installation | fertilizers, pesticides, sediment, packing materials, materials excess/trim/spall | all site areas with a pervious final finish; final weeks of construction |

Dedicated asphalt or concrete batch plants will not be used on this project and, therefore, do not constitute a potential source of pollution at this site.

## B. Structural Control Measures

These are the traditional 'brick and mortar' techniques that will be employed at the site to minimize erosion and sediment transport.

| Check Dams (CD) | |
|---|---|
| *Description:* Check dams are temporary grade control structures placed in drainage channels to limit the erosivity of stormwater by reducing flow velocity. Check dams are typically constructed from rock, gravel bags, sand bags, or, sometimes, proprietary devices. Reinforced check dams are typically constructed from rock and wire gabion. Although the primary function of check dams is to reduce the velocity of concentrated flows, a secondary benefit is sediment trapping upstream of the structure. | |
| *Installation Schedule* | May be part of an initial installation where used in existing or temporary diversion swales. As part of a phased installation they will be placed consecutively with the reference control measure. |
| *Maintenance and Inspection* | Replace missing rocks causing voids in the check dam. If gravel bags or sandbags are used, replace or repair torn or displaced bags. Remove accumulated sediment, as needed to maintain control measure effectiveness, typically before the sediment depth upstream of the check dam is within one-half of the crest height. Remove accumulated sediment prior to mulching, seeding, or chemical soil stabilization. |

| Concrete Washout Area (CWA) | |
|---|---|
| *Description:* Concrete waste management involves designating and properly managing a specific area of the construction site as a concrete washout area. A concrete washout area can be created using one of several approaches designed to receive wash water from washing of tools and concrete mixer chutes, liquid concrete waste from dump trucks, mobile batch mixers, or pump trucks. Three basic approaches are available: excavation of a pit in the ground, use of an above ground storage area, or use of prefabricated haul-away concrete washout containers. | |
| *Installation Schedule* | This is an interim installation that must be in-place and available prior to any concrete delivery to the site. |
| *Maintenance and Inspection* | Part of inspecting and maintaining washout areas is ensuring that adequate signage is provided and in good repair and that the washout area is being used, as opposed to washout in non-designated areas of the site. Remove concrete waste in the washout area, as needed to maintain functionality (typically when filled to about two-thirds of its capacity). Collect concrete waste and deliver offsite to a designated disposal location. |

| Construction Fence (CF) | |
|---|---|
| *Description:* Temporary fencing consisting of studded steel tee posts and orange plastic mesh. Its use restricts site access to designated entrances and exits, delineates construction site boundaries, and keeps construction out of sensitive areas such as natural areas to be preserved as open space, wetlands, and riparian areas. | |
| *Installation Schedule* | To be in-place for the initial site inspection and prior to any earth disturbing activities. |
| *Maintenance and Inspection* | The integrity of construction fencing installations should be inspected at least daily and continually any time construction occurs in close proximity. Misalignments, gaps, and fallen or sagging sections, are to be repaired in place or removed and replaced as appropriate to the deficiency noted. |

| Culvert Inlet Protection (CIP) | |
|---|---|
| *Description:* Culvert inlet protection is constructed of gravel that has been wrapped by wire mesh or a geotextile to form an elongated cylindrical filter. Culvert inlet protection is typically used either as a perimeter control or as part of culvert protection. Culvert inlet protection is intended to trap sediment from stormwater runoff that flows onto roadways as a result of construction activities. | |
| *Installation Schedule* | Perimeter placement is an initial installation. Phasing installation may be necessary as construction of additional curb and gutter is completed. |
| *Maintenance and Inspection* | Culvert inlet protection is susceptible to displacement and breaking due to vehicle traffic. Inspect the control measure for damage and repair or replace as necessary. Remove sediment by sweeping or vacuuming as needed to maintain the functionality of the measure, typically when sediment has accumulated behind the measure to one-half of the measure's height. |

| Sediment Control Log (SCL) | |
|---|---|
| *Description:* A sediment control log is a linear roll made of natural materials such as straw, coconut fiber, or other fibrous material trenched into the ground and held with a wooden stake. Sediment control logs are also often referred to as "straw wattles." They are used as a sediment barrier to intercept sheet flow runoff from disturbed areas. | |
| *Installation Schedule* | Perimeter placement is an initial installation. Phasing installation may be necessary as construction of curbs, gutters, and sidewalks is completed. |
| *Maintenance and Inspection* | Be aware that sediment control logs will eventually degrade. Remove accumulated sediment before the depth is one-half the height of the sediment log and repair damage to the sediment log, typically by replacing the damaged section. |

| Sediment Trap (ST) | |
|---|---|
| *Description:* Sediment traps are formed by excavating an area or by placing an earthen embankment across a low area or drainage swale. Sediment traps are designed to capture drainage from disturbed areas and allow settling of sediment. | |
| *Installation Schedule* | May be an initial installation or phased as drainage patterns are modified during overlot grading. Regardless, they should be in-place prior to disturbing upstream areas. |
| *Maintenance and Inspection* | Inspect the sediment trap embankments for stability and seepage. Remove accumulated sediment as needed to maintain the effectiveness of the sediment trap, typically when the sediment depth is approximately one-half the height of the outflow embankment. Inspect the outlet for debris and damage. Repair damage to the outlet, and remove all obstructions. |

| Stabilized Staging Area (SSA) | |
|---|---|
| *Description:* A stabilized surface, either paved or covered with 3-inch diameter or larger aggregate, providing a clearly designated area where construction equipment and vehicles, stockpiles, waste bins, and other construction-related materials are stored. The contractor office trailer may also be located in this area. | |
| *Installation Schedule* | Initial, typically constructed with at the same time as the vehicle tracking control installation. |
| *Maintenance and Inspection* | Maintenance of stabilized staging areas includes maintaining a stable surface cover of gravel, repairing perimeter controls, and following good housekeeping practices. |

| Vehicle Tracking Control (VTC) |
|---|
| *Description:* A coarse-aggregate surfaced pad underlain by a geotextile that provides a stabilized construction site access for vehicles to exit the site onto paved public roads. An effective vehicle tracking control helps remove sediment (mud or dirt) from vehicle tires, reducing tracking onto the paved surface. |

| | |
|---|---|
| *Installation Schedule* | An initial installation in all cases where a paved access and staging area is not available. If a paved access and staging area is available tracking controls must be in place as soon as they are removed if that removal is to be a part of the construction activities. |
| *Maintenance and Inspection* | Inspect the area for degradation and replace aggregate or material used for a stabilized entrance/exit as needed. If the area becomes clogged and ponds water, remove and dispose of excess sediment or replace material with a fresh layer of aggregate as necessary. With aggregate vehicle tracking controls, ensure rock and debris from this area do not enter the public right-of-way. Remove sediment that is tracked onto the public right of way daily or more frequently as needed. Excess sediment in the roadway indicates that the stabilized construction entrance needs maintenance. |

The site maps show location and timing for each structural control installation and includes a detail for the control measures construction.

## C. NON-STRUCTURAL CONTROL MEASURES

The following controls measures require mechanical means of construction or installation but, generally, their installs will not require removal and they will become integral to the finished site.

| Seeding & Mulching (SM) | |
|---|---|
| *Description:* Temporary seeding can be used to stabilize disturbed areas that will be inactive for an extended period. Permanent seeding should be used to stabilize areas at final grade that will not be otherwise stabilized. Effective seeding includes preparation of a seedbed, selection of an appropriate seed mixture, proper planting techniques, and protection of the seeded area with mulch, geotextiles, or other appropriate measures. Mulching consists of evenly applying straw, hay, shredded wood mulch, rock, bark or compost to disturbed soils and securing the mulch by crimping, tackifiers, netting or other measures. Mulching helps reduce erosion by protecting bare soil from rainfall impact, increasing infiltration, and reducing runoff. Although often applied in conjunction with temporary or permanent seeding, it can also be used for temporary stabilization of areas that cannot be reseeded due to seasonal constraints. | |
| *Installation Schedule* | Seeding dates for the highest success probability of perennial species along the Front Range are generally in the spring from April through early May and in the fall after the first of September until the ground freezes. If the area is irrigated, seeding may occur in summer months, as well. Installer should refer to the specific planting information on the project Landscape Plan included within this SWMP. Apply mulch promptly after final grading is reached, typically within no more than 7 days, on portions of the site not otherwise permanently stabilized. Generally used in conjunction with seeding to help protect the seedbed and stabilize the soil. However, it can also be used as temporary cover on low to mild slopes to help temporarily stabilize disturbed areas |

| | |
|---|---|
| | where growing season constraints prevent effective re-seeding. |
| *Maintenance and Inspection* | Monitor and observe seeded areas to identify areas of poor growth or areas that fail to germinate. Seeded areas may require irrigation, particularly during extended dry periods. Targeted weed control may also be necessary. Protect seeded areas from construction equipment and vehicle access. Reseed and mulch these areas, as needed. After mulching, the bare ground surface should not be more than 10 percent exposed. Reapply mulch, as needed, to cover bare areas. |

### Stockpile Management (SP)

| | |
|---|---|
| *Description:* Stockpile management includes measures to minimize erosion and sediment transport from soil stockpiles. | |
| *Installation Schedule* | An initial improvement required to be in-place upon first need for pile storage. |
| *Maintenance and Inspection* | Inspect perimeter controls and inlet protection in accordance with their respective Fact Sheets. Where seeding, mulch and/or soil binders are used, reseeding or reapplication of soil binder may be necessary. |

### Surface Roughening (SR)

| | |
|---|---|
| *Description:* An erosion control practice that involves tracking, scarifying, imprinting, or tilling a disturbed area to provide temporary stabilization of those areas. Surface roughening creates variations in the soil surface that help to minimize wind and water erosion. Depending on the technique used, surface roughening may also help establish conditions favorable to establishment of vegetation. | |
| *Installation Schedule* | Surface roughening should be performed either after final grading or to temporarily stabilize an area during active construction that may be inactive for a short time period. |
| *Maintenance and Inspection* | Care should be taken not to drive vehicles or equipment over areas that have been surface roughened. Tire tracks will smooth the roughened surface and may cause runoff to collect into rills and gullies. |

### Wind Erosion / Dust Control (DC)

| | |
|---|---|
| *Description:* Wind erosion and dust control measures help to keep soil particles from entering the air as a result of land disturbing construction activities. These controls include a variety of practices generally focused on either graded disturbed areas or construction roadways. For graded areas, practices such as seeding and mulching, use of soil binders, site watering, or other practices that provide prompt surface cover should be used. For construction roadways, road watering and stabilized surfaces should be considered. | |
| *Installation Schedule* | Continuous through the life of the project. |
| *Maintenance and Inspection* | When using any kind of water spray measure to aid in dust control, be careful not to overwater. Overwatering will cause construction vehicles to track mud off-site. |

| Portable Toilets (PT) | |
|---|---|
| *Description:* Portable toilets do not require any pre-existing services or infrastructure, but are completely self-contained thereby minimizing the risk of pollutant migration. | |
| *Installation Schedule* | Continuous through the life of the project. |
| *Maintenance and Inspection* | Portable toilets shall be serviced at necessary intervals to eliminate the possibility of overflow. |

| Street Sweeping (SS) | |
|---|---|
| *Description:* Street sweeping removes sediment that has been tracked onto roadways by means of sweeping and/or vacuuming. It can be conducted by shovel(s) and broom(s), or by mechanical means. | |
| *Installation Schedule* | Continuous through the life of the project. |
| *Maintenance and Inspection* | Roadways should be inspected daily, or more frequently as necessary. Sediment should be removed and disposed of appropriate to the material and pollutants collected. |

The site maps show location and timing for each non-structural control installation and includes a detail for the control measures construction.

## D. Ancillary Controls

Temporary Soil Stabilization is required on any area of the site where ground disturbing construction activity has permanently ceased, or temporarily ceased for more than 14 calendar days. It is preferred that completed work areas receive installation of final landscaping. However, when out of season or in consideration of the temporary cessation condition it may be necessary to apply tarps, soil binders, erosion control blankets, and temporary seeding and mulching (SM). The contractor will follow the recommendations of an appropriately knowledgeable landscape or stormwater management professional as to the type, means, and application most appropriate to the time of year and dormancy period under consideration.

Dust Control is required throughout construction when dry and friable exposed earth, masonry materials, or sawcut fines may become suspended in the air as a result of construction disturbance. In those conditions the contractor shall apply enough water to the exposed soils or materials to prevent the suspension; means may be mechanical or manual as appropriate to the magnitude of the operation. However, the contractor shall not use excessive water creating mud, runoff, or noticeable erosion.

Groundwater dewatering is not anticipated on this construction site. Regardless, should it prove necessary, groundwater water may NOT be discharged to surface waters or to storm sewer systems without separate permit coverage. The discharge of groundwater water to the land is permitted per the specific conditions of the CDPH&E "Low Risk Discharge Guidance – Discharges of Uncontaminated Groundwater to Land" (Policy 27). The SWMP Administrator must modify the SWMP accordingly; including identifying the location of such operations on the site map and the control practices used to ensure the requirements of Policy 27 are met.

The discharge of pumped stormwater dewatering water, only, from excavations, ponds, depressions, etc., to surface waters, or to a MS4 is allowed by the Colorado Discharge Permit System (CDPS)

General Permit for Stormwater Discharges Associated with Construction Activities (Stormwater Construction Permit), as long as the dewatering activity and associated control measures are identified in the SWMP (including location of the activity), and those control measures are implemented in accordance with the SWMP. The general contractor and/or SWMP Administrator must amend this SWMP to include control measure implementation for stormwater dewatering discharge should that activity become necessary for the progression of the construction project. [Note: Pumping stormwater does not by itself render the pumped water a process water, provided that the pump does not contribute additional pollutants to the discharge.]

In addition, the contractor shall meet and document all county ESQCP requirements regarding dewatering.

## E. Good Housekeeping Procedures

This section covers practices that will be implemented to prevent pollution associated with solid, liquid, and hazardous construction-related materials stored and used on site. Practices include trash disposal, recycling, proper material handling, and cleanup measures to reduce the potential for stormwater runoff to pick up construction site wastes and discharge them to surface waters. For hazardous or toxic materials, such as paints, solvents, petroleum products, pesticides, wood preservatives, acids, roofing tar, and others a comprehensive set of waste-management practices is established that includes storage, handling, inventory, and cleanup procedures in case of spills.

No construction waste materials are to be buried on site.

All personnel will be instructed regarding the correct procedure for waste disposal; hazardous or otherwise. Notices stating these practices will be clearly posted on site and the contractor who manages the day-to-day site operations will be responsible for seeing that these procedures are followed.

### 1. Solid or Construction Waste

Proper solid waste disposal consists of keeping all solid materials from discharging from the site. No uncontained waste piles will be allowed on site. All solid waste, including disposable materials incidental to the construction activities, must be collected and placed in containers; including, but not limited to, packaging, spoils, and worker litter. Containers will be sited within the SSA unless otherwise indicated on the site map. The containers will be emptied periodically by a contract trash disposal service and hauled away from the site in accordance with local, state, and federal regulations. Collection frequency will be targeted to avoid overflowing containers and will be at an accelerated rate during any active demolition work. Where practical reuse and/or recycling of demolition or construction materials is encouraged.

### 2. Sanitary and Septic Waste

Temporary sanitary facilities (PT) shall be provided for all site personnel to use within the SSA as shown on the site map. These facilities are to be maintained and emptied by an appropriately licensed commercial operator of such facilities who will treat or dispose of sanitary and septic waste in accordance with state and local regulations. Individual units are to be tied or staked down to avoid accidental overturning. Check facilities for leaks as a part of the regular inspection schedule and, if found, repair or replace immediately.

3. BUILDING MATERIAL HANDLING AND STAGING

The site entrance and exit are to be clearly marked so that delivery vehicles are directed in and out over the VTC and can operate within the SSA to the greatest extent practical. An effort will be made to receive and store only enough products required to do the job. All materials stored on site will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure. Storage areas are to be notated on the site maps, by the general contractor, along with any appropriate control measures or secondary containment measures.

The general contractor shall create a clearly designated on-site fueling and maintenance area that is clean and dry; location to be reflected on the site maps. This location may, ideally, be within the SSA and should be away from drainage facilities and watercourses. Above ground storage tanks are not to be installed on the construction site. A spill kit will be kept at this location and staff are to be trained in its use. Inspect on-site vehicles and equipment regularly for leaks, equipment damage, and other service problems. Use drip pans, drip cloths, or absorbent pads when replacing spent fluids. Collect all spent fluids, store in appropriate labeled containers in the proper storage areas, and recycle fluids whenever possible.

To the greatest extent practical do not wash equipment or vehicles on the construction site. Use off-site washing facilities when available. Unavoidable cleaning should occur at a location where wash water will be captured and infiltrated; the CWA as designated on the site map is appropriate. Do not use detergents.

4. HAZARDOUS MATERIALS AND WASTES

Paints, solvents, pesticides, fuels and oils, other hazardous materials or building materials that have the potential to contaminate stormwater are to be stored indoors or under cover whenever possible and always per the manufacturer's recommendation and the Spill Prevention and Control Plan (SPCP) in the Appendix of this report. The general contractor's designated representative may use the provided SPCP or prepare one of their own. Regardless, the "active" SPCP shall be included in the appropriate appendix of this report and a copy kept with the clean-up equipment and supplies location.

The following general guidelines shall be adhered to in the storage, use, and disposal of all hazardous materials and wastes:

- Consult with local waste management authorities about the requirements for disposing of hazardous materials.
- Whenever possible all of a product will be used up before disposing of the container.
- To prevent leaks, empty and clean hazardous waste containers before disposing of them.
- Never remove the original product label from the container because it contains important safety information. Follow the manufacturer's recommended method of disposal, which should be printed on the label.
- Never mix excess products when disposing of them, unless specifically recommended by the manufacturer.

To ensure the proper disposal of contaminated soils that have been exposed to and still contain hazardous substances, consult with state or local solid waste regulatory agencies or private

firms. Contract with an appropriately licensed landfill to accept contaminated soils and provide any required laboratory tests in compliance with local, state, or federal regulation.

Paint and dirt are often removed from surfaces by sandblasting. Sandblasting grits are the byproducts of this procedure and consist of the sand used and the paint and dirt particles that are removed from the surface. These materials are considered hazardous if they are removed from older structures because they are more likely to contain lead-, cadmium-, or chrome-based paints. To ensure proper disposal of sandblasting grits, contract with a licensed waste management or transport and disposal firm.

Some additional product specific guidelines that are to be followed on site include:

- Fertilizers used will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to stormwater. Storage will be in a covered shed, or equivalent covered enclosure. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.
- All paint containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm sewer system, but will be properly disposed of according to manufacturer's instructions or state and local regulations.

Inspect storage and use areas and identify containers or equipment that could malfunction and cause leaks or spills. Check equipment and containers for leaks, corrosion, support or foundation failure, or other signs of deterioration, and test them for soundness. Immediately repair or replace any that are found to be defective.

An effective waste management system requires training and signage to promote awareness of the hazards of improper storage, handling, and disposal of wastes. The only way to be sure that waste management practices are being followed is to be aware of worker habits and to inspect storage areas regularly. Management time, to the extent required to ensure that all workers are following the proper procedures, is a part of this SWMP.

## F. Construction Phasing and Sequencing

Construction phasing refers to disturbing only part of a site at a time in order to limit the potential for erosion from areas that could be allowed to remain dormant. The scope, size, and time frame involved for this proposed construction project does not allow for effective phasing; overlot grading through final stabilization will occur as a single mobilization. All work areas within the Limits of Construction (LOC) will be disturbed simultaneously and are expected to be stabilized together.

Construction sequencing or scheduling refers to a specified order of work that coordinates the timing of land disturbing activities and the installation of erosion and sediment control practices. The general contractor is to provide a full and detailed schedule, with dates, addressing all major construction activities and the installation/removal of associated control measures.

The following is an outline for control measure sequencing that the general contractor shall address in their provided schedule. Until such time as the general contractor provides a schedule it is assumed the construction start date is fall 2022 and the construction completion date is spring 2023:

| Time Line Operation | Control Measures |
|---|---|
| Pre-Disturbance, Site Access [Control Measures shown as "Initial" on Site Map] | · Begin observation of adjacent road for track out. Sweep on a regular basis and immediately upon observation of track out.<br>· Establish vehicle tracking control (VTC) at entrances from/to peripheral paved roadways.<br>· Install sediment control logs (SCL), culvert inlet protection (CIP), and construction fence (CF) at the perimeter of the planned area of initial disturbance.<br>HALT: Permittee shall schedule and pass an initial inspection prior to any site clearing, grubbing, grading, or excavation activity if required by county ESQCP regulations. |
| Site Clearing and Grubbing [Control Measures shown as "Initial" on Site Map] | Clear and grub the immediate area to be utilized as a stabilized staging area.<br>· Install stabilized staging areas (SSA).<br>· Portable toilets (PT) are to be located within the SSA on a flat surface away from drainage paths. Toilets are to be staked in place to protect against tipping.<br>· Locate a waste disposal area within the SSA.<br>· Implement materials management and good housekeeping practices. This includes handling of trash/construction waste and the sanitizing of portable toilets.<br>Begin general clearing, grubbing, and earthwork activities within the area of initial disturbance.<br>· Establish a central stockpile location and begin implementation stockpile management practices (SP).<br>· Separate and stockpile topsoil, leave roughened and/or cover.<br>· Protect stockpiles with perimeter control measures. Stockpiles should be located away from drainage paths and should be accessed from the upgradient side so that perimeter controls can remain in place on the downgradient side. Use erosion control blankets, temporary seeding, and/or mulch for stockpiles that will be inactive for an extended period.<br>· Leave disturbed area of site in a roughened condition or purposefully surface roughen (SR) to limit erosion. Consider temporary revegetation (SM) for areas of the site that have been disturbed but that will be inactive for an extended period.<br>· Mechanically tack in place mulch (SM) in areas that will not be worked further for at least 14 days.<br>· Water to minimize dust (DC) but not to the point that watering creates runoff. |
| Paving and Grading [Added Control Measures shown as "Interim" on Site Map] | Implement grading and preparation for site paving operations. In addition to the above Control Measures:<br>· Implement construction site good housekeeping practices to prevent pollution associated with solid, liquid and |

| | |
|---|---|
| | hazardous construction-related materials and wastes, including street sweeping (SS).<br>· Construct a concrete washout area (CWA) and provide signage thereto.<br>· Conduct overlot grading starting with construction of temporary sediment traps (ST), diversion channel and diversion swale.<br>· Install check dam(s) (CD) in conjunction with construction of diversion channel and swale.<br>· Remove excess or waste materials.<br>· Remove stored materials.<br>· Protect and repair control measures as necessary.<br>Install site paving. |
| Final Stabilization | In Addition to the above Control Measures:<br>· Install Landscaping.<br>· Remove all temporary control measures when site has reached final stabilization. |

The general contractor shall include a copy of the full and detailed schedule in this SWMP. When the construction schedule is altered, erosion and sediment control measures in the SWMP and construction drawings should be appropriately adjusted to reflect actual "on the ground" conditions at the construction site.

To date, the proposed development of the site described herein does not rely on control measures owned or operated by another entity.

## VI. INSPECTION AND MAINTENANCE

Inspection and maintenance practices are generally noted on the Control Measure Descriptions found in Section IV.B and IV.C above. Additional direction may be found on the associated details included on the site maps. Execution of these requirements are the responsibility of the designated SWMP Administrator and shall be completed in compliance with all local, state, and federal statutes.

INSPECTION SCHEDULES – The first site inspection must occur within seven calendar days of commencement of construction activities. Thereafter, the minimum inspection schedule requires a thorough inspection of the stormwater management system be performed and documented immediately after the installation of any control measure; at least every 7 days; and within 24 hours of any precipitation event that causes surface erosion (i.e., that results in stormwater running across the ground). If more frequent inspections are required to ensure that control measures are properly maintained and operated, or to meet county requirements; the inspection schedule must be modified to meet this need.

INSPECTION PROCEDURES - During each inspection the inspector must evaluate overall pollutant control system performance as well as particular details of individual system components. Additional factors should be considered as appropriate to the circumstances. Inspections must include observation of the following:

- The construction site perimeter and discharge points (including discharges into a storm sewer system). All discharge points must be inspected to determine whether erosion control measures are effective in preventing significant impacts to receiving waters;
- Locations where vehicles enter and exit the site and haul routes must be inspected for evidence of offsite tracking;
- Locations where stormwater has the potential to discharge offsite;
- All disturbed areas;
- Areas used for material/waste storage that are exposed to precipitation;
- Other areas determined to have a significant/high potential for stormwater pollution, such as demolition areas or concrete washout locations;
- All erosion and sediment control measures identified in the SWMP;
- Any other structural control measures that may require maintenance, including but not limited to measures such as secondary containment around fuel tanks and the condition of spill response kits.

The inspection must determine if there is evidence of, or the potential for, pollutants entering the drainage system. Control measures shall be reviewed to determine if they still meet the design and operational criteria in the SWMP, and if they continue to adequately control pollutants at the site. Any control measure not operating in accordance with the SWMP must be addressed as soon as possible, immediately in most cases, to minimize the discharge of pollutants, and the SWMP must be updated as described below.

At nearly every site, the implemented control measures will have to be modified to adapt to changing site conditions, or to ensure that potential pollutants are consistently and properly managed. The pollutant sources and management practices at a site must be reviewed on an ongoing basis (and specifically during the required inspections listed in the Stormwater Construction Permit or in applicable county requirements). When control measures or other site conditions change, the SWMP must be modified to accurately reflect the field conditions. Examples include, but are not limited to, removal of control measures, identification of new potential pollutant sources, addition of control measures, modification of control measure installation and implementation criteria or maintenance procedures, and changes in items included in the site map and/or description. SWMP revisions must be made prior to changes in site conditions, except for Responsive SWMP Changes, as follows:

- SWMP revisions must be made immediately after changes are made in the field to address control measure installation and/or implementation issues; or
- SWMP revisions must be made as soon as practicable, but in no case more than 72 hours, after change(s) in control measure installation and/or implementation occur at the site that require development of materials to modify the SWMP (e.g., design of retention pond capacity)

The SWMP shall be kept on site at all times during construction and revised, as needed, to reflect the actual site conditions, control measure locations, and control measure status.

Control measures shall be inspected in accordance with the standards included on the Site Maps associated with this SWMP.

INSPECTION DOCUMENTATION/RECORD KEEPING - Good record keeping is important, and required, for a period of three years following expiration or inactivation of permit coverage. Sample forms are in the appendices and shall include:

- Inspection date;
- Name(s) and title(s) of personnel making the inspection;
- Weather conditions at the time of inspection;
- Project name and location;
- Reason for the inspection;
- Location(s) of discharges of sediment or other pollutants from the site;
- Location(s) and condition(s) of control measures that need maintenance;
- Location(s) and condition(s) of control measures that failed to operate as designed or proved inadequate for a particular location and need to be replaced;
- Location(s) of control measures that need to be added, or were not in place at the time of inspection;
- Minimum inspection frequency and reasons for and deviations from minimum inspection schedule;
- Maintenance requirements;
- Descriptions of corrective action and dates when corrective action was implemented;
- Descriptions of measures taken to prevent future violations including requisite changes to the SWMP, as necessary;
- After adequate corrective action(s) has been taken, or where a report does not identify any incidents requiring corrective action, the inspection form shall contain be signed and certified by the SWMP Manager as follows:

  "I verify that, to the best of my knowledge and belief, all corrective action and maintenance items identified during the inspection are complete, and the site is currently in compliance with the permit."

Additional record keeping, including a log book, is required. Such record keeping shall include other items related to the SWMP such as:

- Dated photographs;
- Field notebooks;
- Drawings and maps;
- Control measure operation and maintenance;
- Stormwater contamination;
- Contacts with suppliers;
- Notes on the need for and performance of preventative maintenance and repairs;
- Implementation of specific items in the SWMP;
- Training events given or attended;
- Events involving material handling and storage;
- Contacts with regulatory agencies and personnel;
- Notes of employee activities, contact, notifications, etc.

Records of spills, leaks, or overflows that result in the discharge of pollutants must be documented and maintained. Information that should be recorded for all occurrences includes the time and date, weather conditions, reasons for the spill, etc. Certain spills may require immediate reporting. Refer to the attached SPCP for additional requirements entailed for addressing a spill condition.

MAINTENANCE - All erosion and sediment control practices and other protective measures identified in the SWMP must be maintained in effective operating condition and in accordance with good engineering, hydrologic, and pollution control practices. Site inspection procedures above must address maintenance of control measures that are found to no longer function as needed and designed, as well as preventative maintenance to proactively ensure continued operation. Control measures that have failed, or have the potential to fail without maintenance must be addressed as soon as possible, immediately in most cases, to prevent the discharge of pollutants. Maintenance shall be in accordance with town, county, stormwater authority, state, and manufacturer standards, specifications and recommended procedures.

Maintenance practices in addition to those described elsewhere in the SWMP must include the following:

- Control measures at locations where vehicles enter and exit the site must be supplemented as necessary to prevent tracking of sediment off-site, or the adjacent street must be swept.
- Material storage areas that are exposed to precipitation must be covered, or original covers must be repaired or supplemented. Protective berms must be built or repaired in order to contain runoff from these areas.
- Sediment barriers must be enlarged or cleaned in order to provide additional capacity if necessary, and to remove the potential for stored sediment to discharge from the site. All material excavated from behind sediment barriers must be moved to an appropriate location where it will not become an additional pollutant source.

Control measures shall be maintained in accordance with the documentation in Section V.B and V.C above as well as any additional information which may be included on the site map details or in accordance with county requirements.

## VII. FINAL STABILIZATION AND LONG-TERM CONTROLS

All on-site open space will receive landscaping in accordance with the approved Landscape Plan included as a part of this SWMP. Landscaped areas are considered stabilized upon completion of the entire installation and final site walk and acceptance by the owner's construction representative. Other open space will receive seeding in accordance with specifications of that same document or as indicated in the Site Maps and can be considered 'stabilized' upon establishment of vegetative cover with an individual plant density of at least 70% of pre-disturbance levels. Remaining improvement areas are stabilized upon
mpletion of concrete placement including form removal, or
nt.

mwater Construction Permit and the ESQCP may be requested
lth and Environment (CDPHE) and the county by the permittee
tion, all temporary erosion and sediment control measures have
he SWMP are complete.

is provided for this development within the detention and
tructed as a part of the project along the site's south property
ovide a Water Quality Capture Volume (WQCV) within
which discharge by means of infiltration to the ground.

Correct. No outlet structure or outlet pipe. Neither are the ponds MHFD Sand Filters. The MHFD defines a Sand Filter as "a filtering or infiltrating BMP that consists of a surcharge zone underlain by a sand bed with an underdrain system;" and indicates that the "...underdrain gradually dewaters the sand bed and discharges the runoff to a nearby channel, swale, or storm drain." Although the MHFD acknowledges elsewhere the possibility of a "Full Infiltration Section," they do not appear to provide a design methodology to comply with for such a design. Nor does their Detention Basin Design Workbook appear to provide a full infiltration outlet design; instead only facilitating the modeling of ponds with underdrains and outlet structures with associated weirs and orifices that discharge as concentrated flow. The intent of the ponds associated with this project is to infiltrate all required volumes (WQCV, EURV, 100-yr) into the ground.

There won't be an outlet structure with an outlet pipe? So both ponds will be Sand Filter basins? Clarify.

# VIII. PERMIT COVERAGE

Stormwater Construction Permit coverage is required by county, state, and federal regulations for stormwater discharged from the construction activity identified by this SWMP. The owner and the awarded general contractor will be the permittee from the start of construction through final stabilization, Inactivation Notice, and county closeout documentation.

## A. PERMIT APPLICATION

All water quality permit applications, submittals, authorization changes, and coverage terminations are now handled through Colorado Environmental Online Services (CEOS). Instructions for establishing an account and making permit related submittals can be found in the CDPHE appendix, "Water Quality Permits – Public CEOS Portal Standard Operating Procedures" tab. Said portal is accessed via:

https://ceos.colorado.gov/CO/CEOS/Public/Client/CO_CIMPLE/Shared/Pages/Main/Login.aspx

Be aware that initial permit application may take up to 10 business days to process and that coverage is required prior to any earth disturbing activities on site; including the installation of initial control measures.

Similarly, the general contractor will be responsible for obtaining coverage under El Paso County regulations. Application is the responsibility of the contractor.

## B. LIMITATIONS

The following limitations apply to CDPS permit coverage at a minimum. The contractor is responsible for adhering to more stringent county limitations as necessary:

- Stormwater discharges from construction activities shall not cause, have the reasonable potential to cause, or measurably contribute to an exceedance of any water quality standard, including narrative standards for water quality.
- Concrete washout water shall not be discharged to state surface waters or to storm sewer systems. On-site permanent disposal of concrete washout waste is not authorized by this permit. Discharge to the ground of concrete washout waste that will subsequently be disposed of off-site is authorized by this permit.
- Bulk storage structures for petroleum products and any other chemicals shall have secondary containment or equivalent adequate protection so as to contain all spills and prevent any spilled material from entering State waters.
- No chemicals are to be added to the discharge unless permission for the use of a specific chemical is granted by the CDPHE – Water Quality Division. In granting the use of such chemicals, special conditions and monitoring may be addressed by separate correspondence.
- The CDPHE – Water Quality Division reserves the right to require sampling and testing, on a case-by-case basis, in the event that there is reason to suspect that compliance with the SWMP is a problem, or to measure the effectiveness of the control measures in removing pollutants in the effluent. Such monitoring may include Whole Effluent Toxicity testing.
- All site wastes must be properly managed to prevent potential pollution of state waters. This permit does not authorize on-site waste disposal.

- All dischargers must comply with the lawful requirements of federal agencies, municipalities, counties, drainage districts and other local agencies regarding any discharges of stormwater to storm drain systems or other water courses under their jurisdiction, including applicable requirements in municipal stormwater management programs developed to comply with CDPS permits. Dischargers must comply with local stormwater management requirements, policies or guidelines including erosion and sediment control.

All discharge covered by the CDPS permit shall be composed entirely of stormwater associated with construction activity excepting that discharge from the following sources, when combined with stormwater, are permitted. The contractor is responsible for adhering to more stringent county limitations as necessary:

- Discharges from uncontaminated springs that do not originate from an area of land disturbance;
- Discharges of landscape irrigation return flow;
- Emergency firefighting activities.

There is no anticipation that any of these occurrences will be encountered during construction. However, should they occur or be encountered during construction the SWMP Administrator must modify this SWMP to document the occurrence as well as address appropriate control measures put in place to mitigate their impacts to stormwater quality.

Concrete chute washwater is allowed as infiltration discharge to the ground within the site limits as detailed in Section V.B. Stormwater (only) dewatering is also allowed under this permit as described in Section V.D. Groundwater dewatering with discharge off of the site requires separate permit coverage be attained from the CDPHE. Groundwater dewatering to the land is allowed under the Policy 27 guidelines as detailed in section V.D. The contractor is responsible for adhering to more stringent county limitations as necessary.

Except for the case where no feasible alternative exists to avoid loss of life, personal injury, or severe property damage any bypass causing effluent limitations to be exceeded is prohibited.

### C. NOTIFICATIONS AND RECORDS

In addition to correspondence with the county for application or transfer of permit coverage in conformance with county requirements and using county forms, etc.; the following permit modifications require CDPHE notification through the CEOS portal:

- Reassignment of some portion of the covered site to another operator
- Modification to the construction limits
- Change of any contacts listed in the application
- To file a Termination Application

Oral and written notification to CDPHE is also required in the following instances:

- Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident;

- Circumstances leading to any unanticipated bypass which exceeds any effluent limitations in the permit;
- Circumstances leading to any upset which causes an exceedance of any effluent limitation in the permit;
- Daily maximum violations for any of the pollutants limited by Part I of the CDPS Permit. This includes any toxic pollutant or hazardous substance or any pollutant specifically identified as the method to control any toxic pollutant or hazardous substance.

Oral Notifications, during normal business hours shall be to:

Clean Water Compliance Section
Water Quality Control Division
Telephone: (303) 692-3500

Written notification shall be to:

Clean Water Compliance Section
Water Quality Control Division
Colorado Department of Public Health and Environment
WQCD-WQP-B2
4300 Cherry Creek Drive South
Denver, CO 80246-1530

The permittee is required to keep the SWMP on file and available, upon request, for three calendar years following coverage termination (or longer as required by the county). All documentation should be retained including, but not limited to:

- Documentation of all SWMP modifications
- Inspection and corrective action logs
- Governing authority inspection reports
- Any notice of violation, corrective action, or penalties incurred

The SWMP must be on-site and available from project initiation to permit inactivation.

## IX. FAMILIARITY REQUIRED

This SWMP has been prepared to meet the requirements established in the Stormwater Construction Permit and by El Paso County as they apply to the proposed development of an outdoor storage facility at Space Village Filing No. 4, El Paso County, Colorado circa 2022. The preparer of this document has made an effort to address all applicable requirements but does not guarantee the comprehensiveness of this report as it may apply to the project; either upon initiation or through construction progression. The requirement to comply with the provisions of the Stormwater Construction Permit and county requirements remains with the Permittee and it is incumbent on them to be familiar with those requirements and make any SWMP amendments necessary to be in full compliance. A copy of the State of Colorado General Permit is provided in the Appendix of this report.

# X. REFERENCES

A. *Soil Map – El Paso County Area, Colorado*, USDA NRCS Web Soil Survey, current online edition.

B. *Soil Survey of El Paso County Area, Colorado*, USDA SCS, 1981.

C. *Flood Insurance Rate Map, Map Number 08041C0754G*, FEMA, effective date December 7, 2018.

D. *ALTA/NSPS Land Title Survey*, Altura Land Consultants, April 28, 2022.

E. *COR400000 Stormwater Management Plan Guidance,* Colorado Department of Health and the Environment, current online edition.

F. *COR400000 General Permit Stormwater Discharges Associated with Construction Activity Authorization to Discharge Under the Colorado Discharge Permit System (CDPS)*, current online edition.

G. *Engineering Criteria Manual*, El Paso County, current online edition, revised December 13, 2016; published 2018.

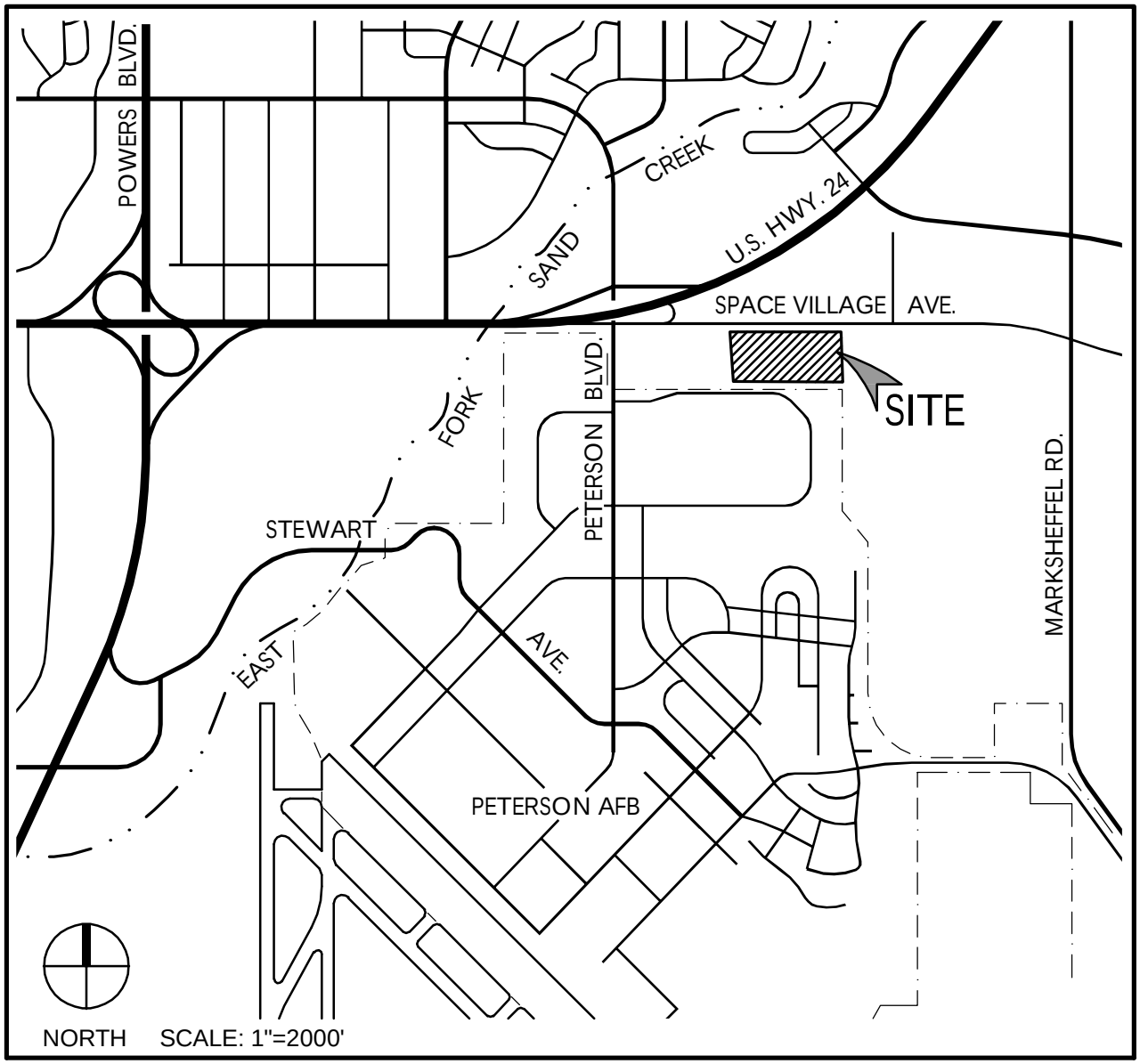
H. *Drainage Criteria Manual, Volumes 1 and 2, Volume 1 Update*, El Paso County, current online edition (October 31, 2018).

I. *Urban Storm Drainage Criteria Manual, Volumes 1 through 3*, Mile High Flood District, current online edition

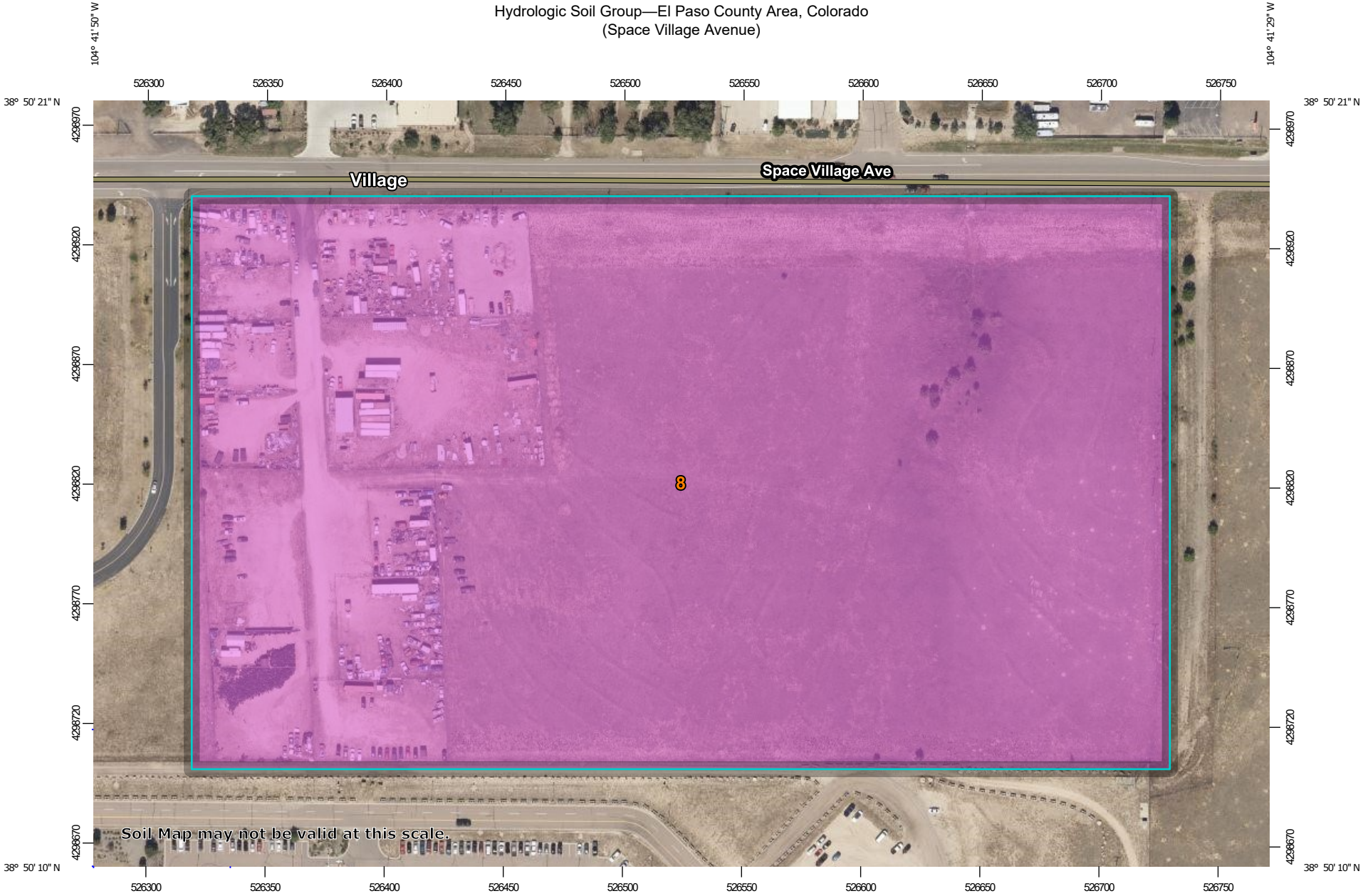
# APPENDIX A

- Vicinity Map
- NRCS Web Soil Survey Soil Data Maps
- SCS Soil Survey
- Flood Insurance Rate Map

# VICINITY MAP



Hydrologic Soil Group—El Paso County Area, Colorado
(Space Village Avenue)




Map Scale: 1:2,260 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 30 60 120 180

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

## MAP LEGEND

**Area of Interest (AOI)**

Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**

A
A/D
B
B/D
C
C/D
D
Not rated or not available

**Soil Rating Lines**

A
A/D
B
B/D
C
C/D
D
Not rated or not available

**Soil Rating Points**

A
A/D
B
B/D
C
C/D
D
Not rated or not available

**Water Features**

Streams and Canals

**Transportation**

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

**Background**

Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 19, Aug 31, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 19, 2018—Sep 23, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Hydrologic Soil Group

| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
|---|---|---|---|---|
| 8 | Blakeland loamy sand, 1 to 9 percent slopes | A | 24.4 | 100.0% |
| **Totals for Area of Interest** | | | **24.4** | **100.0%** |

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff: None Specified*

# SOIL SURVEY OF

# EL PASO COUNTY AREA, COLORADO

**UNITED STATES DEPARTMENT OF AGRICULTURE**
**SOIL CONSERVATION SERVICE**
**IN COOPERATION WITH THE**
**COLORADO AGRICULTURAL EXPERIMENT STATION**

is severely eroded and blowouts have developed, the new seeding should be fertilized.

Windbreaks and environmental plantings are generally suited to this soil. Soil blowing is the main limitation for the establishment of trees and shrubs. This limitation can be overcome by cultivating only in the tree rows and leaving a strip of vegetation between the rows. Supplemental irrigation may be necessary when planting and during dry periods. Trees that are best suited and have good survival are Rocky Mountain juniper, eastern redcedar, ponderosa pine, Siberian elm, Russian-olive, and hackberry. Shrubs that are best suited are skunkbush sumac, lilac, and Siberian peashrub.

This soil is suited to wildlife habitat. It is best suited to habitat for openland and rangeland wildlife. In cropland areas, habitat favorable for ring-necked pheasant, mourning dove, and many nongame species can be developed by establishing areas for nesting and escape cover. For pheasant, the provision of undisturbed nesting cover is vital and should be included in plans for habitat development. Rangeland wildlife, such as pronghorn antelope, can be encouraged by developing livestock watering facilities, properly managing livestock grazing, and reseeding range where needed.

This soil has good potential for use as homesites. Shallow excavation is severely limited because cut banks cave in. This sandy soil requires special management practices to reduce water erosion and soil blowing. Capability subclasses IIIe, irrigated, and IVe, nonirrigated.

**7—Bijou sandy loam, 3 to 8 percent slopes.** This deep, well drained soil is on flood plains, terraces, and uplands. It formed in sandy alluvium and eolian material derived from arkose deposits. Elevation ranges from 5,400 to 6,200 feet. The average annual precipitation is about 13 inches, the average annual air temperature is about 49 degrees F, and the average frost-free period is about 145 days.

Typically, the surface layer is brown sandy loam about 4 inches thick. The subsoil is brown or grayish brown sandy loam about 24 inches thick. The substratum is pale brown loamy coarse sand.

Included with this soil in mapping are small areas of Olney sandy loam, 3 to 5 percent slopes; Valent sand, 1 to 9 percent slopes; Vona sandy loam, 3 to 9 percent slopes; and Wigton loamy sand, 1 to 8 percent slopes.

Permeability of this Bijou soil is rapid. Effective rooting depth is 60 inches or more. Available water capacity is moderate. Organic matter content of the surface layer is low. Surface runoff is slow, and the hazards of erosion and soil blowing are moderate.

Almost all areas of this soil are used for range.

This soil is suited to the production of native vegetation suitable for grazing. Because of the hazards of water erosion and soil blowing, the soil is not suited to nonirrigated crops.

Native vegetation is dominantly blue grama, sand dropseed, needleandthread, side-oats grama, and buckwheat.

Seeding is a suitable practice if the range has deteriorated. Seeding the native grasses is a good practice. If the range is severely eroded and blowouts have developed, the new seeding should be fertilized. Brush control and grazing management may be needed to improve the depleted range. Grazing should be managed so that enough forage is left standing to protect the soil from blowing, to increase infiltration of water, and to catch and hold snow.

Windbreaks and environmental plantings are generally suited to this soil. Soil blowing is the main limitation for the establishment of trees and shrubs. This limitation can be overcome by cultivating only in the tree rows and leaving a strip of vegetation between the rows. Supplemental irrigation may be needed when planting and during dry periods. Trees that are best suited and have good survival are Rocky Mountain juniper, eastern redcedar, ponderosa pine, Siberian elm, Russian-olive, and hackberry. Shrubs that are best suited are skunkbush sumac, lilac, and Siberian peashrub.

This soil is suited to wildlife habitat. It is best suited to habitat for openland and rangeland wildlife. Rangeland wildlife, such as pronghorn antelope, can be encouraged by developing livestock watering facilities, by properly managing livestock grazing, and by reseeding range where needed.

This soil has good potential for use as homesites. Shallow excavation is severely limited because cut banks cave in. This soil requires special management practices to reduce water erosion and soil blowing. Capability subclass VIe.

**8—Blakeland loamy sand, 1 to 9 percent slopes.** This deep, somewhat excessively drained soil formed in alluvial and eolian material derived from arkosic sedimentary rock on uplands. The average annual precipitation is about 15 inches, the average annual air temperature is about 47 degrees F, and the average frost-free period is about 135 days.

Typically, the surface layer is dark grayish brown loamy sand about 11 inches thick. The substratum, to a depth of 27 inches, is brown loamy sand; it grades to pale brown sand that extends to a depth of 60 inches.

Included with this soil in mapping are small areas of Bresser sandy loam, 0 to 3 percent slopes; Bresser sandy loam, 3 to 5 percent slopes; Truckton sandy loam, 0 to 3 percent slopes; Truckton sandy loam, 3 to 9 percent slopes; and Stapleton sandy loam, 3 to 8 percent slopes. In some areas, mainly north of Colorado Springs in the Cottonwood Creek area, arkosic beds of sandstone and shale are at a depth of 0 to 40 inches.

Permeability of this Blakeland soil is rapid. Effective rooting depth is 60 inches or more. Available water capacity is low to moderate. Organic matter content of the surface layer is medium. Surface runoff is slow, the hazard of erosion is moderate, and the hazard of soil blowing is severe.

Most areas of this soil are used for range, homesites, and wildlife habitat.

Native vegetation is dominantly western wheatgrass, side-oats grama, and needleandthread. This soil is best suited to deep-rooted grasses.

Proper range management is necessary to prevent excessive removal of plant cover from the soil. Interseeding improves the existing vegetation. Deferment of grazing in spring increases plant vigor and soil stability. Proper location of livestock watering facilities helps to control grazing.

Windbreaks and environmental plantings are fairly well suited to this soil. Blowing sand and low available water capacity are the main limitations for the establishment of trees and shrubs. The soil is so loose that trees need to be planted in shallow furrows and plant cover needs to be maintained between the rows. Supplemental irrigation may be needed to insure survival. Trees that are best suited and have good survival are Rocky Mountain juniper, eastern redcedar, ponderosa pine, and Siberian elm. Shrubs that are best suited are skunkbush sumac, lilac, and Siberian peashrub.

This soil is suited to wildlife habitat. It is best suited to habitat for openland and rangeland wildlife. Rangeland wildlife, such as pronghorn antelope, can be encouraged by developing livestock watering facilities, properly managing livestock grazing, and reseeding range where needed.

This soil has good potential for urban development. Soil blowing is a hazard if protective vegetation is removed. Special erosion control practices must be provided to minimize soil losses. Capability subclass VIe.

**9—Blakeland complex, 1 to 9 percent slopes.** This complex is on uplands, mostly in the Falcon area. The average annual precipitation is about 15 inches, the average annual air temperature is about 47 degrees F, and the frost-free period is about 135 days.

This complex is about 60 percent Blakeland loamy sand, about 30 percent Fluvaquentic Haplaquolls, and 10 percent other soils.

Included with these soils in mapping are areas of Columbine gravelly sandy loam, 0 to 3 percent slopes, Ellicott loamy coarse sand, 0 to 5 percent slopes, and Ustic Torrifluvents, loamy.

The Blakeland soil is in the more sloping areas. It is deep and somewhat excessively drained. It formed in sandy alluvium and eolian material derived from arkosic sedimentary rock. Typically, the surface layer is dark grayish brown loamy sand about 11 inches thick. The substratum, to a depth of 27 inches, is brown loamy sand; it grades to pale brown sand that extends to a depth of 60 inches or more.

Permeability of the Blakeland soil is rapid. The effective rooting depth is more than 60 inches. The available water capacity is moderate to low. Surface runoff is slow, and the hazard of erosion is moderate.

The Fluvaquentic Haplaquolls are in swale areas. They are deep, poorly drained soils. They formed in alluvium derived from arkosic sedimentary rock. Typically, the surface layer is brown. The texture is variable throughout. The water table is at a depth of 0 to 3 feet.

The Blakeland soil is well suited to deep-rooted grasses. Native vegetation is dominantly western wheatgrass, side-oats grama, and needleandthread. Rangeland vegetation on the Fluvaquentic Haplaquolls is dominantly tall grasses, including sand bluestem, switchgrass, prairie cordgrass, little bluestem, and sand reedgrass. Cattails and bulrushes are common in the swampy areas.

Proper range management is needed to prevent excess removal of plant cover from these soils. It is also needed to maintain the productive grasses. Interseeding improves the existing vegetation. Deferment of grazing during the growing season increases plant vigor and soil stability, and it helps to maintain and improve range condition. Proper location of livestock watering facilities helps to control grazing of animals.

Windbreaks and environmental plantings are fairly well suited to these soils. Blowing sand and low available water capacity are the main limitations to the establishment of trees and shrubs. The soils are so loose that trees need to be planted in shallow furrows and plant cover needs to be maintained between the rows. Supplemental irrigation may be needed to insure survival. Trees that are best suited and have good survival are Rocky Mountain juniper, eastern redcedar, ponderosa pine, and Siberian elm. Shrubs that are best suited are skunkbush sumac, lilac, and Siberian peashrub.

The Blakeland soil is well suited to wildlife habitat. It is best suited to habitat for openland and rangeland wildlife. Rangeland wildlife, such as pronghorn antelope, can be encouraged by developing livestock watering facilities, properly managing livestock grazing, and reseeding range where needed. Wetland wildlife can be attracted to the Fluvaquentic Haplaquolls and the wetland habitat can be enhanced by several means. Shallow water developments can be created by digging or by blasting potholes to create open-water areas. Fencing to control livestock grazing is beneficial, and it allows wetland plants such as cattails, reed canarygrass, and rushes to grow. Control of unplanned burning and prevention of drainage that would remove water from the wetlands are good practices. Openland wildlife use the vegetation on these soils for nesting and escape cover. These shallow marsh areas are especially important for winter cover if natural vegetation is allowed to grow.

The Blakeland soil has good potential for homesites, roads, and streets. It needs to be protected from erosion when vegetation has been removed from building sites. The Fluvaquentic Haplaquolls have poor potential for homesites. Their main limitations for this use are the high water table and the hazard of flooding. Capability subclass VIe.

**10—Blendon sandy loam, 0 to 3 percent slopes.** This deep, well drained soil formed in sandy arkosic alluvium on alluvial fans and terraces. The average annual precipitation is about 15 inches, the mean annual air temperature is about 47 degrees F, and the average frost-free period is about 135 days.

# National Flood Hazard Layer FIRMette

FEMA

104°41'53"W 38°50'34"N

104°41'16"W 38°50'6"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

*Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020*

## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

**SPECIAL FLOOD HAZARD AREAS**
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

**OTHER AREAS OF FLOOD HAZARD**
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

**OTHER AREAS**
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

**GENERAL STRUCTURES**
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

**OTHER FEATURES**
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

**MAP PANELS**
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/4/2022 at 6:52 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

# APPENDIX B

- Spill Prevention and Control Plan
- Colorado Department Of Public Health & Environment (CDPHE) Environmental Spill Reporting
- Colorado Department Of Public Health & Environment (CDPHE) Five Day Reporting Form

# SPILL PREVENTION AND CONTROL PLAN

Spills and leaks of solid and liquid materials processed, handled or stored outdoors can be a significant source of stormwater pollutants. Spilled substances can reach receiving waters when runoff washes these materials from impervious surfaces or when spills directly enter the storm sewer system during dry weather conditions.

It is not expected that the construction activities occurring at Space Village Filing No. 4, in El Paso County, Colorado in development of approximately 22.8 acres of commercial space, will result in the legal requirement to have in place a Spill Prevention Control and Countermeasure (SPCC) plan (a.k.a. Spill Prevention and Control Plan [SPCP]) under Section 311 of the Clean Water Act. However, spills are a possibility on any construction site and this SPCP provides the contractor with an effective Best Management Practice to prevent stormwater contamination and a resultant degradation in downstream water quality. The projects general contractor may elect to provide a separately prepared SPCP for site implementation but all relevant sections of that document must be incorporated into the SWMP and vice versa.

## SPILL PREVENTION MEASURES

Effective spill control includes both spill prevention and spill response measures and depends on proper employee training for spill response measures and may also include structural spill containment, particularly at industrial locations. Structural spill containment measures typically include temporary or permanent curbs or berms that surround a potential spill site. Berms may be constructed of concrete, earthen material, metal, synthetic liners, or other material that will safely contain the spill. Spill control devices may also include valves, slide gates, or other devices that can control and contain spilled material before it reaches the storm sewer system or receiving waters.

The general contractor shall:

- Train employees on potential sources of pollution on-site and provide clear, common-sense spill prevention practices. Require that these practices be strictly followed.
- Identify equipment that may be exposed to stormwater, pollutants that may be generated, and possible sources of leaks or discharges.
- Perform regular inspection and preventative maintenance of equipment to ensure proper operation and to check for leaks or evidence of discharge (stains). Provide clear procedures to ensure that needed repairs are completed and provide temporary leak containment until such repairs can be implemented.
- Drain or replace motor oil and other automotive fluids in a designated area away from storm sewer inlets. Collect spent fluids and recycle or dispose of properly. Never dispose of these fluids in the storm sewer or sanitary sewer.
- In fueling areas, clean up spills with dry methods (absorbents) and use damp cloths on gas pumps and damp mops on paved surfaces. Never use a hose to “wash down” a fuel spill.
- Where practical, reduce stormwater contact with equipment and materials by implementing indoor or covered storage, implementing stormwater run-on control measures, and following good housekeeping practices.

## IDENTIFICATION OF POTENTIAL SPILL AREAS

The following areas construction areas are potential spill areas and should be identified on the SWMP site maps. Appropriate BMPs are to be in place at all times to limit the possibility that accidental spills wind up affecting water quality:

- Loading and unloading areas
- Outdoor storage areas
- Waste disposal/storage areas
- Areas that generate significant dust or particulates (e.g. mason's area)
- Locations where other routine maintenance activities occur such as equipment maintenance and cleaning, pesticide/fertilizer application, etc. Additionally, areas where smaller leaks may occur such as parking should also have basic spill cleanup procedures.

## MATERIAL HANDLING PROCEDURES

From a water quality perspective, the primary principle behind effective material handling practices is to minimize exposure to stormwater. This can be accomplished by storing the material indoors under weather-resistant covering, elevating the material off the ground by using pallets, and diverting stormwater around materials storage areas. The following handling procedures are to be followed during construction:

- Keep bulk solid materials such as raw materials, sand, gravel, topsoil, compost, concrete, packing materials, metal products and other materials covered and protected from stormwater.
- When practical, store materials on impermeable surfaces.
- Store hazardous materials according to federal, state, and local hazardous materials requirements.
- Adopt procedures that reduce the chance of spills or leaks during filling or transfer of materials.
- Substitute less toxic or non-toxic materials for toxic materials.
- Store containers that are easily punctured or damaged away from high traffic areas (i.e., adopt a materials flow/plant layout plan).
- Add waste-capture containers such as collection pans for lubricating fluids.
- Store drums and containers with liquid materials on impermeable surfaces and provide secondary containment where appropriate. Drums stored outdoors should be located on pallets to minimize contact with runoff.

## STOCKPILES OF DRY MATERIALS

The following spill prevention procedures shall be implemented:

All materials shall be stockpiled in designated areas, with control measures used to reduce and minimize the runoff of contaminants. Control measures such as silt fence and sediment control logs will be installed according to municipal, stormwater authority, and state criteria using the details shown in the Site Maps. Loading and unloading operations shall be performed in a manner to limit materials from being spilled. Any spilled materials shall be swept up immediately after the operations are performed.

## VEHICLE FUELING

The following spill prevention procedures shall be implemented:

All vehicle fueling will be done off-site as much as possible. All on-site fueling operations will be performed in areas specifically designated and monitored by the superintendent. Measures will be taken where necessary to reduce and minimize spills during vehicle fueling operations. These measures may include the placement of a temporary berm around the fueling area, covering the fueling area under a temporary portable structure, and/or the placement of drip pans under valves and tank openings. Berms will be constructed around all fueling areas. An adequate supply of absorbents will also be stockpiled at each fueling area.

## ROUTINE VEHICLE AND EQUIPMENT MAINTENANCE

The following spill prevention procedures shall be implemented:

All vehicle maintenance will be performed off-site when possible. However, there may be occasions where construction equipment and vehicles may break down at the site and on-site repairs are more feasible. On-site vehicle and equipment maintenance, if needed, will be performed in designated areas, where practical, and enclosed by earthen berms. All maintenance areas will maintain an adequate supply of drip pans and absorbent materials. The pans will be placed underneath vehicles as needed and absorbents will be used in the event of a minor spill or leak.

## SPILL RESPONSE

NOTE: IN CASE OF FIRE, EVACUATE ALL PERSONNEL FROM THE IMMEDIATE AREA, RENDER FIRST AID TO ANYONE WHO IS INJURED, AND DIAL 911 IMMEDIATELY. TAKE APPROPRIATE STEPS TO PROTECT HUMAN LIFE AND CONTROL FIRES FIRST. SPILL CONTROL IS A SECONDARY CONCERN.

## CLEANUP AND REMOVAL PROCEDURES

Upon detection of any spill, the first action to be taken is to ensure personal safety. All possible ignition sources, including running engines, electrical equipment (including cellular telephones, etc.), or other hazards will be immediately turned off or removed from the area. The extent of the spill and the nature of the spilled material will be evaluated to determine if remedial actions could result in any health hazards, escalation of the spill, or further damage that would intensify the problem. If such conditions exist, a designated employee will oversee the area of the spill and the construction SWMP Administrator will be notified immediately.

The source of the spill will be identified and, if possible, the flow of pollutants stopped if it can be done safely. However, no employee will attend to the source and begin cleanup of the spill until ALL emergency priorities (fire, injuries, etc.) have been addressed.

### SMALL SPILLS

Small spills (usually less than 5 gallons) consist of minor quantities of gasoline, oil, anti-freeze, or other materials that can be cleaned up by a single person using readily available materials.

The following procedure shall be used for clean-up of small spills:

1. Ensure personal safety, evaluate the spill, and if possible, stop the flow of pollutants.

2. Contain the spread of the spill using absorbents, portable berms, sandbags, or other available measures.

3. Spread absorbent materials on the area to soak up as much of the liquid as possible and to prevent or minimize infiltration into the soil.

4. Once the liquids have been absorbed, remove all absorbents from the spill and place the materials in a suitable storage container. On paved areas, wipe any remaining liquids from the surface and place the materials in a storage container. Do not spray or wash down the area using water. For open soil areas, excavate any contaminated soil as soon as possible and place the soil in a suitable storage container. All materials will then be transported off-site for disposal at an approved facility.

5. If immediate transfer and storage of the contaminated soil is not practical, excavate and place the contaminated soil on a double thickness sheet of 3-mil or higher polyethylene film. In addition, a small berm should be formed around the outer edges of the soil stockpile, underneath the polyethylene film; to ensure that contaminants are not washed from the site during precipitation events and that materials do not seep through the berm.

6. Record all significant facts and information about the spill, including the following:

   - Type of pollutant
   - Location of spill
   - Apparent source of spill
   - Estimated volume of spill
   - Time of discovery
   - Actions taken to clean up spill

7. Notify the SWMP Administrator of the spill and provide the information from above. The SWMP Administrator will then make any required authority contact.

MEDIUM TO LARGE SPILLS

Medium to large spills consist of larger quantities of materials (usually greater than 5 and up to 25 gallons) that are used on-site that cannot be controlled by a single person. Generally, a number of facility personnel will be needed to control the spill and a response may require the suspension of other facility activities.

The following procedure shall be used for the cleanup of medium to large spills:

1. Ensure personal safety, evaluate the spill, and if possible, stop the flow of pollutants.

2. Immediately dispatch a front-end loader or similar equipment to the spill and construct a berm of soil down gradient of the spill to minimize the spread of

potential pollutants. On paved surfaces, portable berms, sandbags, booms, or other measures will be used to control the lateral spread of pollutants.

3. When the spread of the spill has been laterally contained, contact the SWMP Administrator or designated facility employee and provide them information on the location, type, and amount of spilled material, and a briefing on the extent of the spread and measures undertaken to contain the contaminants.

4. Depending on the nature of the spill, mobilize additional resources as needed to contain the contaminants.

5. Cleanup will commence when the lateral spread has been contained and the notification to the SWMP Administrator has been made.

6. Freestanding liquid will be bailed or pumped into 55-gallon storage drums, steel tanks, or other suitable storage containers. When all the liquid has been removed from the pavement or soil layer, absorbents will be applied to the surface and transferred to the storage containers when they have soaked up as much of the spill as possible.

7. On paved surfaces, the remaining contaminants will be removed to the extent possible, with rags, sweeping, or similar measures. The area of the spill will not be sprayed or washed down using water. Any contaminant-soaked materials will be placed into the storage containers with the other absorbents.

8. The remaining contaminated soils will be excavated and loaded into a dump truck(s) for disposal off-site at a designated facility. If transport off-site is not immediately available, the remaining soils will be stockpiled on a double thickness sheet of 3-mil or higher polyethylene film. In addition, a small berm will be formed around the outer edges of the soil stockpile, underneath the polyethylene film, to ensure that contaminants are not washed from the site during precipitation events and that materials do not seep through the berm.

9. Record all significant facts and information about the spill, including the following:

   - Type of pollutant
   - Location of spill
   - Apparent source of spill
   - Estimated volume of spill
   - Time of discovery
   - Actions taken to clean up spill

10. Provide the SWMP Administrator (or designated employee) with the information from above. The SWMP Administrator will then make any required authority contact.

## NOTIFICATION

Notification to the Colorado Department of Public Health & Environment (CDPHE) is required if there is any release or suspected release of any substance, including oil or other substances that spill into or threaten State waters. Unless otherwise noted, notifications are to be made by the SWMP Administrator and only after emergency responses related to the release have been implemented. This will prevent misinformation and assures that notifications are properly conducted.

The notification requirements are as follows:

1. Spills into or Threatens State Waters: Immediate notification is required for releases that occur beneath the surface of the land or impact or threaten waters of the State or threaten the public health and welfare. Notifications that will be made are:

    a. For any substance, regardless of quantity, contact CDPHE at 1-877-518-5608.

        State as follows:

        - Give your name
        - Give location of spill (name of city/town)
        - Give date and time of incident
        - Give permit number (if applicable)
        - Give potentially responsible party contact name, phone number, and e-mail
        - Describe the nature of the spill, type of product, and estimate size of spill
        - Describe type of action taken thus far, type of assistance or equipment needed

    b. For any quantity of oil, other fluids, designated hazardous substances; and for Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) reportable releases, immediately call the National Response Center at 1-800-424-8802. For any quantity of oil or other fluids, and for Emergency Planning and Community Right-to-Know Act (EPCRA) reportable releases, immediately call the:

        - National Response Center at 1-800-424-8802
        - State Emergency Response Center (SERC); CDPHE 24-hour Emergency and Incident Reporting Line at 1-877-518-5608
        - Affected Local Emergency Planning Committee (LEPC); El Paso County Emergency Management 24-hour Contact at 1-719-575-8422

        and state as follows:

        - Give your name
        - Give location of spill (name of city/town and state)
        - Describe the nature of the spill, type of product, and estimate size of spill
        - Describe type of action taken thus far, type of assistance or equipment needed

c. For any accidental discharge to the sanitary sewer system, immediately call the local sewer authority and the affected wastewater treatment plant.

2. Reportable Quantity Spill on Land Surface: Immediate notification is required of a release upon the land surface of an oil in quantity that exceeds 25 gallons, or of a hazardous substance that equals or exceeds 10 pounds of its reportable quantity under Section 101(14) of the Comprehensive Environmental Response, Compensation Liability Act (CERCLA) of 1980 as amended (40 CFR Part 302) and Section 329 (3) of the Emergency Planning and Community Right to Know Act of 1986 (40 CFR Part 355) whichever is less. This requirement does apply at a minimum to the substances listed in Table A below.

TABLE A
Substances Requiring Notification

| SUBSTANCE | REPORTABLE QUANTITY |
|---|---|
| Motor Oil | 25 Gallons |
| Hydraulic Oil | 25 Gallons |
| Gasoline/Diesel Fuel | 25 Gallons |

The notification procedures to be followed are:

- § Give your name
- § Give location of spill (name of city/town and state)
- § Describe the nature of the spill, type of product, and estimate size of spill
- § Describe type of action taken thus far, type of assistance or equipment needed
- § Give name of land owner
- § Specify department responsible for any facilities that may be impacted

3. Notification is not required for release of oil upon the land surface of 25 gallons or less that will not constitute a threat to public health and welfare, the environment or a threat of entering the waters of the State.

4. Notification, as required in paragraphs 1 and 2 above, will be made to the CDPHE using the 24-hour telephone number to report environmental spills. All information known about the release at the time of discovery is to be included, such as the time of occurrence, quantity and type of material, location and any corrective or clean-up actions presently being taken.

5. Contacts: It is the responsibility of the SWMP Administrator to contact the Local Emergency Planning Committee contact, CDPHE, and/or the National Response Center.

The National Response Center is to be contacted when a release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR 110, 4- DFR 117, or 40 CFR 302 occurs during a 24-hour period.

Notification to the CDPHE is required if there is any release or suspected release of any material, including oil or hazardous substances that spill into or threaten State waters.

TABLE B
Emergency Notifications Contacts
(For All Emergencies Dial 911)

| Name/Agency | Number |
|---|---|
| Cimarron Hills Fire Department | 911 |
| El Paso County Hazardous Materials Team | 911 |
| El Paso County Sheriff | 911 |
| Ambulance | 911 |
| Hospital | 911 |
| National Response Center | 1-800-424-8802 |
| CDPHE – Report Environmental Spills (24hrs/day) | 1-877-518-5608 |
| LEPC | 1-719-575-8422 |
| US EPA Region 8 Emergency Response Spill Report Line | 1-800-227-8914 |

6. Reports: The CDPHE requires written notification of a spill or discharge of oil or other substance that may cause pollution of the waters of the State of Colorado. A written report must be submitted to the Water Quality Control Division (WQCD) within 5 days after becoming aware of the spill or discharge. Their "Five day reporting form" is included as an attachment hereto.

   The CDPHE required a written final report within 15 days for all releases of an oil or hazardous substance that requires implementation of a contingency plan. The CDPHE may also require additional reports on the status of the clean-up until any required remedial action has been completed.

   Written notification must contain at a minimum:

   a. Date, time, and duration of the release.
   b. Location of the release.
   c. Person or persons causing and responsible for the release.
   d. Type and amount of oil or substance released.
   e. Cause of the release.
   f. Environmental damage caused by the release.
   g. Actions taken to respond to, contain, and clean-up the release.
   h. Location and method of ultimate disposal of the oil or other fluids.
   i. Actions taken to prevent a reoccurrence of the release.
   j. Any known or anticipated acute or chronic health risks associated with the release.
   k. When appropriate, advice regarding medical attention necessary for exposed individuals.

# Environmental Spill Reporting

*24—Hour Emergency and Incident Reporting Line*
*Office of Emergency Preparedness & Response*

1-877-518-5608

*Updated: June, 2018*

# Reporting chemical spills and releases in Colorado

## General

For all hazardous substance incidents, local emergency response agencies must be notified.

## Releases from fixed facilities

The Superfund Amendments and Reauthorization Act (SARA) Title III, requires reporting releases from fixed facilities

Refer to the SARA Title III List of Lists, available from the Environmental Protection Agency (EPA), for the reportable quantity.

The party that owns the spilled material must immediately notify the following agencies or organizations:

- National Response Center (NRC) 1-800-424-8802;
- Colorado Emergency Planning Committee (CEPC), represented by the Colorado Department of Public Health and Environment (CDPHE) 1-877-518-5608; and
- Local Emergency Planning Committee (LEPC) 1-720-852-6600.

In addition to telephone notification, the responsible party must also send written notification describing the release and associated emergency response to both the CEPC (in this case, CDPHE) and the LEPC.

## Releases from RCRA facilities

Emergency releases from facilities permitted under the Resource Conservation and Recovery Act (RCRA) are reportable according to the permit requirements.

The permit often requires reporting to CDPHE, even if the amount of the release is less than a reportable quantity under SARA Title III (6 CCR 1007-3 Part 264).

Permitted facilities and generators and transporters of hazardous waste are required to have and implement a contingency plan that describes the actions facility personnel must take in response to fires, explosions or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, surface or ground water at the facility (6 CCR 1007-3 Sections 261, 262, 263, 264 and 265).

Whenever there is an imminent or actual emergency situation, appropriate state or local agencies, with designated response roles as described in the contingency plan, must be notified immediately.

The National Response Center or government official designated as the regional on-scene coordinator must be notified immediately if it is determined that the facility has had a release, fire or explosion that could threaten human health or the environment outside the facility.

CDPHE and local authorities must be notified when the facility is back in compliance and ready to resume operations. In addition, the facility must send a written report to CDPHE within 15 days of any incident that requires implementation of the contingency plan. The contingency plan should include current contact information for notification and submittal of written reports.

Permitted facilities, generators and transporters that store hazardous waste must notify CDPHE within 24 hours of any release to the environment that is greater than one (1) pound and must submit a written report to CDPHE within 30 days of the release (6 CCR 1007-3).

## Transportation accidents

Transportation accidents that require reporting:

- Result in a spill or release of a hazardous substance in excess of the reportable quantity (40 CFR Part 302.6)
- Cause injury or death or cause estimated property damage exceeding $50,000.
- Cause an evacuation of the general public lasting one or more hours.

Those that close or shut down one or more major transportation arteries or facilities or result in fire, breakage, spillage, or suspected contamination from radioactive or infectious substances must immediately be reported to the National Response Center.

Refer to the EPA SARA Title III List of Lists for those substances that have reportable quantities.

In addition to the NRC being notified, the local emergency number (9-1-1) must be called and CDPHE should be notified.

Written notification of any transportation accident involving a release of hazardous materials must be provided to the U.S. Department of Transportation within 30 days (49 CFR Part 171.16)

Since hazardous waste is a subset of hazardous materials, transporters who have discharged hazardous waste must notify the NRC and provide a written report to the US Department of Transportation as noted in the above reporting requirements.

The transporter must give immediate notice to the nearest Colorado State Patrol office (8 CCR 1507-8 HMP 5) and the nearest law enforcement agency if the accident or spill involved a vehicle (42-20-113(3) CRS).

Notification and a written report detailing the ultimate disposition of the discharge of hazardous waste must also be provided to CDPHE (6 CCR 1007-2 Section 263.30). This may be a duplicate copy of the US Department of Transportation report

In the event of a spill or discharge of hazardous waste at a transfer facility, the transporter must notify CDPHE within 24 hours if the spill exceeds 55 gallons or if there is a fire or explosion.

Within 15 days of a reportable incident, the transporter must submit a written report of the incident to CDPHE, including the final disposition of the material (6 CCR 1007-2 Section 263.40).

Releases of hazardous waste at a transfer facility may also require notification to the National Response Center and a written report to the U.S. Department of Transportation.

## Releases to water

A release of any chemical, oil, petroleum product, sewage, etc., which may enter waters of the State of Colorado (which include surface water, ground water and dry gullies or storm sewers leading to surface water) must be reported to CDPHE immediately (25-8-601 CRS).

Written notification to CDPHE must follow within five (5) days (5 CCR 1002-61, Section 61.8(5)(d)).

Any accidental discharge to the sanitary sewer system must be reported immediately to the local sewer authority and the affected wastewater treatment plant.

Releases of petroleum products and certain hazardous substances listed under the Federal Clean Water Act (40 CFR Part 116) must be reported to the National Response Center as well as to CDPHE (1-877-518-5608) as required under the Clean Water Act and the Oil Pollution Act.

## Releases to air

Any unpredictable failure of air pollution control or process equipment that results in the violation of emission

control regulations should be reported CDPHE by 10 a.m. of the following working day, followed by a written notice explaining the cause of the occurrence and describing action that has been or is being taken to correct the condition causing the violation and to prevent such excess emissions in the future (5 CCR 1001-2 Common Provisions Regulations Section II.E).

If emergency conditions cause excess emissions at a permitted facility, the owner/operator must provide notice to CDPHE no later than noon of the next working day following the emergency, and follow by written notice within one month of the time when emission limitations were exceeded due to the emergency (5 CCR 1001-5, Regulation 3 Part C, Section VII.C.4).

## Releases from oil and gas wells

All spills or releases of exploration and production wastes or produced fluids which meet the reporting thresholds of the Colorado Oil and Gas Conservation Commission (COGCC) Rule 906 shall be reported verbally to the COGCC within 24 hours of discovery and on the COGCC Spill/Release Report Form 19 within 72 hours of discovery.

Spills or releases are reportable to the COGCC in the following circumstances:

1) the spill or release impacts or threatens to impact any waters of the state, (which include surface water, ground water and dry gullies or storm sewers leading to surface water), a residence or occupied structure, livestock or a public byway;
2) a spill or release in which 1 barrel or more is released outside of berms or other secondary containment; or
3) any spill or release of 5 barrels or more.

COGCC also requires reportable spills or releases be reported to the surface owner and local government. Whether or not they are reportable, spills or releases of any size must be stopped, cleaned up, and investigated as soon as practicable.

If the spill or release impacts or threatens to impact waters of the state, it must also be reported immediately to CDPHE (25-8-601 CRS).

## Releases from storage tanks

Petroleum releases of 25 gallons or more (or any size that causes a sheen on nearby surface waters) from regulated aboveground and underground fuel storage tanks must be reported to the Division of Oil and Public Safety (303-318-8547) within 24 hours. If the report is made after business hours, please leave a message on the technical assistance line for the Division of Oil and Public Safety, and contact the 24 hour CDPHE Emergency and Incident Reporting Line. This includes spills from fuel dispensers.

Spills or releases of hazardous substances from regulated storage tanks in excess of the reportable quantity (40 CFR Part 302.6) must be reported to the National Response Center and the local fire authority immediately, and to the Division of Oil and Public Safety within 24 hours. (8-20.5-208 CRS and 7 CCR 1101-14 Article 4).

Owners/operators of regulated storage tanks must contain and immediately clean up a spill or overfill of less than 25 gallons of petroleum and a spill or overfill of a hazardous substance that is less than the reportable quantity.

If cleanup cannot be accomplished within 24 hours, the Division of Oil and Public Safety must be notified immediately (7 CCR 1101-14 Article 4-4).

CDPHE should also be notified in the case of hazardous substance releases as cleanup activities may be covered by state solid or hazardous waste requirements (6 CCR 1007-2, 6 CCR 1007-3).

Any release that has or may impact waters of the state (which include surface water, ground water and dry

gullies or storm sewers leading to surface water), no matter how small, must be reported immediately to CDPHE (25-8-601 CRS).

## Releases from pipelines

Releases of five or more gallons of hazardous liquids or carbon dioxide from a pipeline that result in explosion or fire, cause injury or death or cause estimated property damage (including cost of clean-up and recovery, value of lost product and property damage) exceeding $50,000 must be reported immediately to the US Department of Transportation Office of Pipeline Safety (49 CFR Part 195 Subpart B) and the National Response Center.

Releases of five or more gallons of hazardous liquids or carbon dioxide from interstate pipelines that do not involve explosion or fire, injury or death or property damage exceeding $50,000 should be reported to the US Department of Transportation Office of Pipeline Safety within 30 days after the incident.

Releases of natural gas from intrastate pipelines that cause injury or death, property damage in excess of $50,000 (including the cost of lost product), closure of a public road, or evacuation of 50 or more people must be reported immediately to the Colorado Public Utilities Commission, Pipeline Safety Group (4 CCR 723-11-2).

Releases of natural gas or liquefied natural gas (LNG) from interstate pipelines that cause injury or death, property damage in excess of $50,000 (including the cost of lost product), or results in an emergency shutdown of the facility must be reported immediately to the National Response Center and the US Dept of Transportation Office of Pipeline Safety.

Releases of oil, petroleum products or other hazardous liquids from interstate and intrastate pipelines that have or may enter waters of the State of Colorado (which include surface water, ground water and dry gullies or storm sewers leading to surface water) must be reported to CDPHE immediately (25-8-601 CRS). CDPHE should also be notified of releases to soil, as cleanup activities may be covered by state solid or hazardous waste requirements (6 CCR 1007-2, 6 CCR 1007-3).

## Radiological accidents, incidents, and events

CDPHE must be notified of any condition that has caused or threatens to cause an event, which meets or exceeds the criteria specified in (6 CCR 1007-1) RH 4.51 and RH 4.52 of the State of Colorado *Rules and Regulations Pertaining to Radiation Control*. Reportable events include lost radioactive materials, lost radiation producing machines, over-exposures to persons, contamination events and fires or explosions involving radioactive materials.

Depending upon the severity of the event, notification may be required immediately, within 24 hours, or within 30 days. In most cases, a written follow-up report is also required.

If you are unsure of the proper notification requirement, please contact CDPHE immediately. Telephone event notifications can be made to the CDPHE Radiation Program at any time by calling 1-303-877-9757.

## Notification Numbers

Colorado Department of Public Health and Environment toll-free 24-hour environmental emergency and incident reporting line: (877) 518-5608 (24-hour)

National Response Center
(800) 424-8802 (24-hour)

State Oil Inspector (Colorado Division of Oil & Public Safety-Above & Underground Storage Tank Regulators)
(303) 318-8547

COLORADO
Water Quality Control Division
Department of Public Health & Environment

# Five day reporting form

Incident / spill / sanitary sewer overflow release

*Use this form to report incidents impacting waters of the state*

The Water Quality Control Division distinguishes between reporting requirements for incidents that occur at entities operating under a Colorado Discharge Permit System (CDPS) permit and those resulting from non-permitted activities.

Permitted activities - Reporting and management of non-compliance incidents and spills that occur as a result of permitted activities should be performed in accordance with the specific requirements in the notifications section of your permit. You may use this form to submit the information requested in the permit.

Non-permitted activities - In the case of an activity where a permit does not address reporting of, or response to, a given spill please submit a written summary of the event, your response, and clean up efforts to the division within five working days of the date of the event. This form is provided for your convenience. If you have any questions please contact the division's field services staff person assigned to your spill case.

Prior to the five working day deadline you may request an extension to submit the report if needed for sampling analysis or other reasons. To request an extension please send an email to the division's field services staff person assigned to your spill case or to the spill administrator. The field services contact list is available at: www.colorado.gov/cdphe/wq-inspection-services-contact-us.

Please send the completed form or report with signature to the division's field services spill administrator:

Michelle Thiebaud
222 S. Sixth Street, 232
Grand Junction, CO 81501

Telephone: 970-248-7150
Fax: 970-248-7198
Email: michelle.thiebaud@state.co.us

| 1. Incident background information | | | | | |
|---|---|---|---|---|---|
| Incident/spill number (division provided) | | Date of event | | County | |
| Type of incident / spill / SSO (check one) | | | | | |
| ☐ Sanitary sewer overflow | | ☐ Potable water/reuse water/ reclaimed water | | ☐ Biosolids | |
| ☐ Wastewater treatment plant bypass or upset (authorized outfall point) | | ☐ Petroleum product | | ☐ Oil or gas field production spill | |
| ☐ Wastewater treatment plant spill or overflow (other than outfall) | | ☐ Chemical | | ☐ Other | |
| Estimated volume released | | | | | |
| Size and depth of area affected | | | | | |
| Contact information | | | | | |
| Potentially responsible party contact name | | | | | |
| Potentially responsible party company/agency name | | | | | |
| CDPHE Permit number and facility name (if applicable) | | | | | |
| Email address | | | Phone | | |

| 2. Incident information: Please provide the following information. |
|---|
| A. Describe incident including source, cause, and location (e.g. address, latitude/longitude). |
| |
| B. Material released, e.g. untreated wastewater, specific chemical or product, biosolids. Please attach the OSHA Material Safety Data Sheets for any and all chemicals or products in spill or release. |
| |

C. Actual or estimated duration of the event and time spill was fully controlled/stopped. If release is still occurring, the date and time the release is expected to be stopped.

D. Describe measures taken or planned to contain, reduce, and clean up spill or release.

E. Describe steps taken or planned to prevent reoccurrence.

3. Incident impact to state waters (As defined in § 25-8-103(19), C.R.S.).
Examples of state waters include: stormwater conveyances (when they discharge to surface water), perennial streams, intermittent or ephemeral gulches, ditches, ponds, lakes, reservoirs, irrigation canals, wetlands and groundwater.

A. Did flow or materials reach surface water of the state? If so, identify the water body or bodies and describe the path of flow. What quantity of material reached the surface waters and what was the resulting impact?

B. Did flow or materials reach groundwater of the state? If so, identify the water body or bodies and describe the path of flow. If yes, what quantity of material reached the ground or groundwater and what was the resulting impact?

C. Did the incident include any of the following? If so, please include additional details below.

| ☐ Chemical release | ☐ Fish kill | ☐ Sheen on water |
|---|---|---|

D. Were any water quality samples or other samples taken? If so, please describe sampling process, sampling location(s) in relationship to the incident, i.e. up/down stream and attach results.

4. Incident impact to areas or water users

A. Describe the potential impact of the incident/spill/SSO to public use areas or downstream water users. This includes parks and swim beaches or public water system sources and irrigation diversions.

B. Were the impacted area users and downstream water users notified and describe the method of notification, e.g. signs posted, via phone.

C. List any downstream users who were notified.

I hereby certify that the information presented above is accurate and complete.

| Signature | Name and title | Company, organization | Date |
|---|---|---|---|
| | | | |

# APPENDIX C

- Colorado Department Of Public Health & Environment (CDPHE) CDPS Documents
  - Colorado Environmental Online Services (CEOS) Help Guide
  - CDPS COR400000 General Permit
  - Low Risk Discharge Guidance - Discharges of Uncontaminated Groundwater to Land (WQP-27)

- El Paso County Documents
  - Erosion and Stormwater Quality Control Permit (ESQCP) Application
  - Inspection Checklist – Grading, Erosion, and Stormwater Quality Controls

# Water Quality Permits

Public CEOS Portal Standard Operating Procedures

## Objective:

This document details the step by step processes of establishing and managing a public CEOS account, and making permit-related submittals to the Water Quality Control Division (division).

**Definitions:**

- **CEOS:** Colorado Environmental Online Services "see-ohs"
  - An online service comprised of a Public Portal and an Agency Portal where submittals can be submitted to the Agency, reviewed, and letters can be issued by the Agency back to the public user.
- **RO:** Responsible Official
  - The person responsible for the facility/entity, and is able to submit submittals.
- **Preparer:**
  - A person authorized to complete submittals on behalf of the RO.
- **Submittal:**
  - Project documentation submitted by the entity to the Agency.

## 1. Creating an Account and Logging In

**Overview**

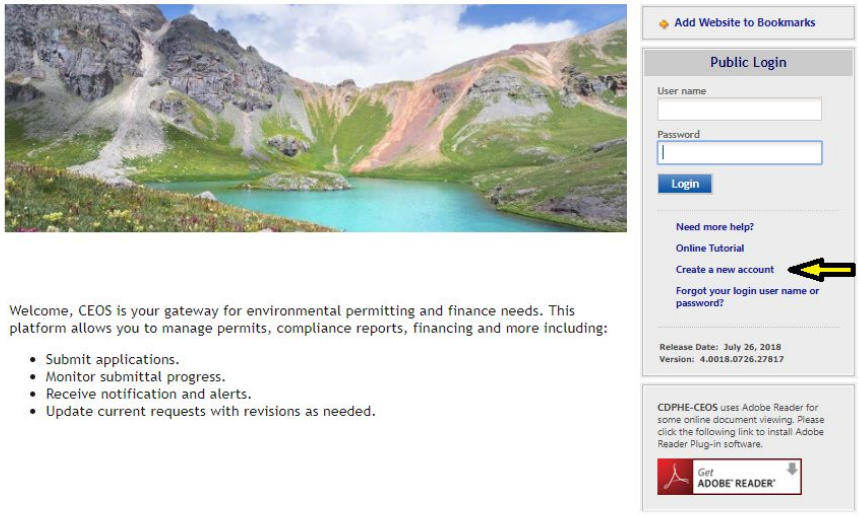
This section covers the steps to create an account on the CEOS Public Portal.

**Responsibility**

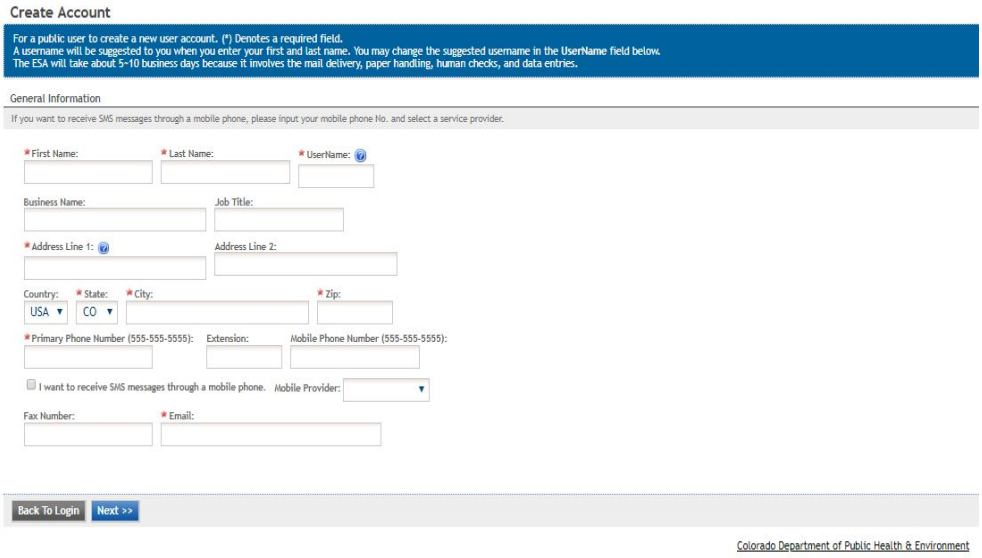
This is the responsibility of the Responsible Officer and/or Preparer. In some circumstances, the Permits Section may have already created an account for you.

**Process**

1. Navigate to the Public Portal home page.
   - https://ceos.colorado.gov/CO/CEOS/Public
2. Click on the "Create a new account button on the right-hand side of the page.




3. Enter the relevant personal information. Items marked with a red star are required. A username will be generated for you based on your first and last name, but you are free to customize it however you would like.
    - You may only create one CEOS account per email address.

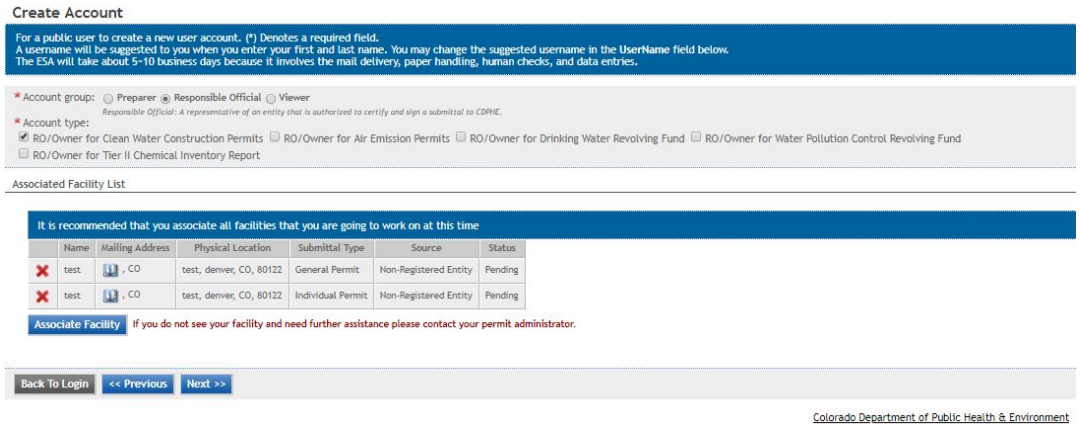



4. Select your account group, type, and associate your facility:
    - **Preparer**
        i. If you are authorized by an entity to prepare documents on their behalf, under “Account group”, select “Preparer”.
        ii. Next, under “Account Type”, check the “Preparer” box.
        iii. Click the “Next” button at the bottom of the page.
    - **Responsible Official**
        i. If you are the town or district official that is responsible for a project, under “Account group” select “Responsible Official”.

ii. Next, under “Account type”, select which fund you are the Responsible Official for. Select both if you are the “RO” for both Drinking Water and Clean Water (i.e., discharge permit) programs.

iii. Next, associate your account with the facility you are the RO for.

1. Click the “Associate Facility” button.
2. Search for your Facility.
    a. You must search for a facility, but if your facility cannot be found you may enter a new facility.
        i. When creating a facility please complete all fields, even those without an asterisk.
        ii. The mailing address fields should be the primary location where the company receives correspondence – it doesn’t have to be a Colorado address, nor does it need to be a physical location (PO boxes are fine)
    b. You may associate a facility now or from the dashboard after an account has been created.
3. Check the box on the right of your facility.
4. Check the box for each submittal type you are responsible for. Checking the “select all” box will select all of the submission types for your facility.
5. Scroll to the bottom of the page and click the “OK” button.
6. Click the next button at the bottom of the page.




5. Choose and answer the security questions. Make sure that you answer in a way that you will remember. Your answers are case sensitive.

6. Fill out the captcha verification. This is case sensitive. Click the “Create Account” button.

7. Click the “back to login” button at the bottom of the page.

8. Logging in for the first time.
   - You will receive an email with your username and a temporary password. Enter this information on the Public Portal home page, and click “Login”.
   - You will be presented with a field to create a new, personal password and PIN number. Fill out these forms and click “Save”.

## 2. Editing Account Information

Overview

This section covers how to update public user account information after an account has been created.

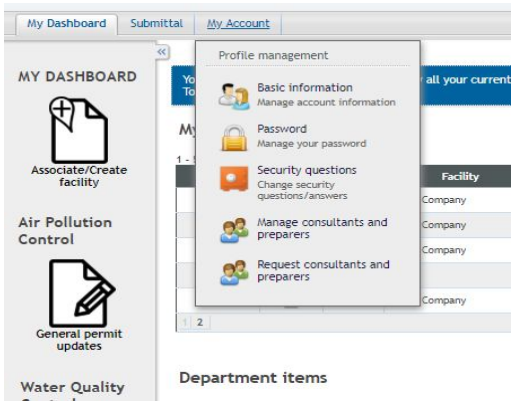
Responsibility

Updating account information is the responsibility of the user.

Process

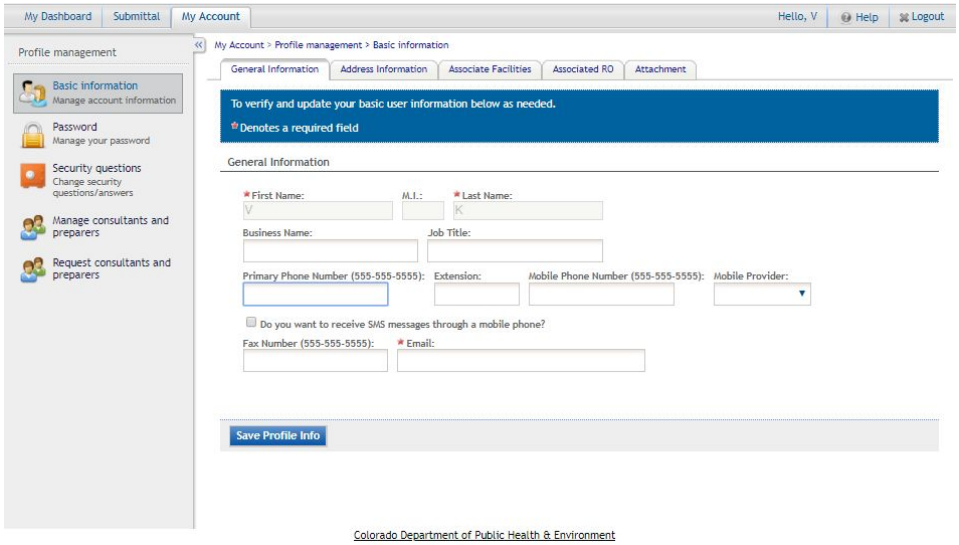
1. Log in to your account and click “Go to your dashboard”.

2. Hover over the “My Account” tab, and click “Basic Information”.




3. From the “General Information” tab on this page, you can update your phone numbers and email. Click “Save Profile Info” when finished.

a. To change your name, please contact the permits administrative team
b. Please note that usernames cannot be changed once an account is created.




Colorado Department of Public Health & Environment

4. To update your address, click on the "Address Information" tab. Click "Save Address Info" when finished.

5. To add a new facility and submittals to your account, click on the "Associate Facilities" tab, click "Associate Facility", search for the facility, and select the facility and submittals you wish to add. Click "OK" when finished.
    a. Please note, to change your account type, or delete a facility association, please contact the permits administrative team.

## 3. Changing Your Password and Security Questions

Overview

This covers how to change passwords and security questions.

Responsibility

Account security is the responsibility of the account owner.

Process

1. Log in to your account and click "Go to your dashboard".

2. To change your password, hover over the "My Account" tab, and click "Password".
    a. Enter your old password, then create a new password and confirm the new password.
    b. Click "Save Password".

c. Next time you log in to CEOS, use the new password that was just created.

3. To change your security questions, hover over the “My Account Tab, and click “Security Questions”.
   a. You may choose a different question from the “Question” dropdown menus, or you can use the same questions.
   b. Enter your new answer/s into the “Answer” box.
   c. Enter a reason for making the change to your security questions.
   d. Click “save”. Your questions and answers have now been updated and will be used to verify your identity when submitting a submittal.

## 4. Managing Consultants and Preparers

Overview

This section covers how a Responsible Official (RO) can associate consultants and preparers with their CEOS account so that they are able to fill out submittals for the RO's facility.

Responsibility

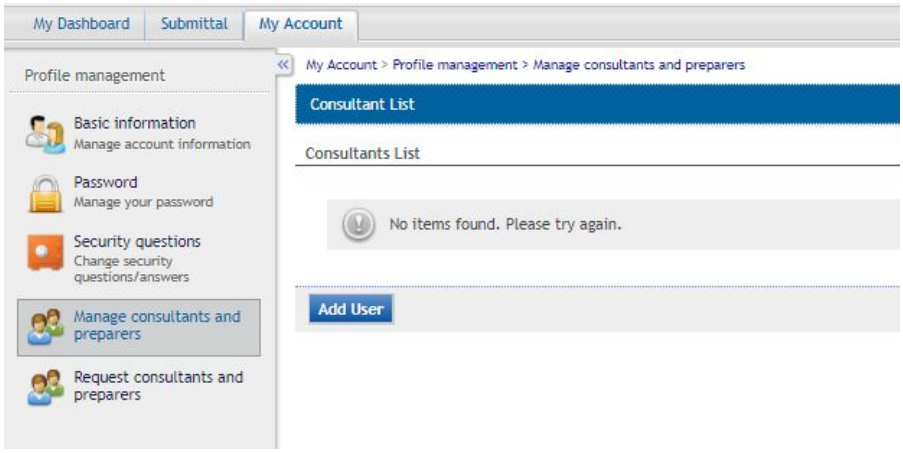
It is the responsibility of the facility’s RO to manage consultants and preparers. The consultants and preparers are responsible for creating their own CEOS accounts.

Process

1. Instruct the person you wish to add as a preparer to create their own CEOS account, with the “preparer” account type selection.

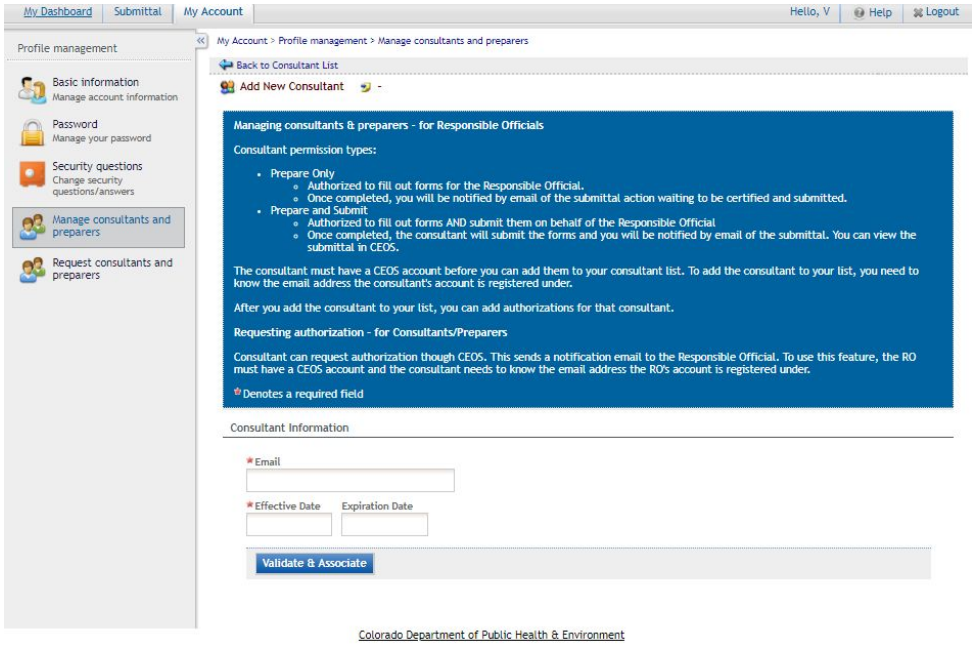
2. As an RO, login to your account and click on “Go to your Dashboard”.

3. Hover over the “My Account” tab, and click on “Manage consultants and preparers”.




4. Click on the “Add User” button.

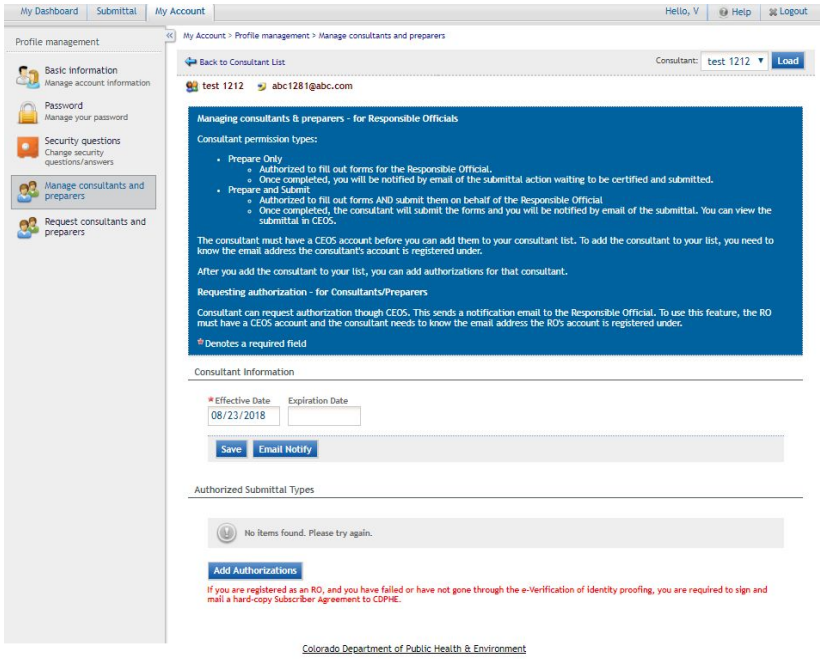
5. Read the information box at the top of the page, and enter the email of the preparer you wish to add.



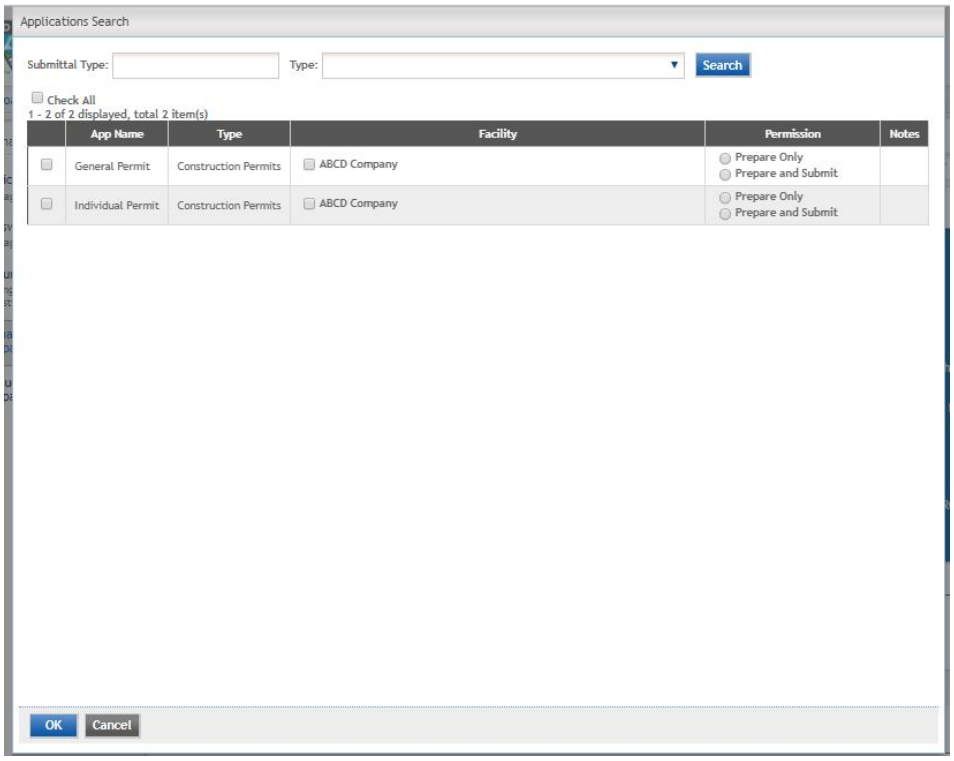

6. Enter a date that you want the person to be eligible to start creating and filling out submittals. Optionally, you may enter the date that this access should end.

7. Click “Validate and Associate”

8. A new screen will load, and it is on this page that you will add the submittals that the preparer is authorized to fill out. Click on the “Add Authorizations” button.




9. Select the required checkboxes for the submittal types that you want to give the preparer access to. If they are authorized for everything, click the "Check All" box at the top of the table.
    a. "Prepare only" will be what is automatically selected. If you would like the preparer to be able to submit any and all applications on your behalf, change it to "Prepare and Submit".




10. Click "OK" to add the authorizations to the preparer.

11. If you would like to send a CEOS system email notification about the authorizations you made to the preparer, click “Email Notify”.

12. Finally, scroll down to the bottom and click “Save” (the save below the dates only saves the dates the preparer is active). The preparer can now log in to their account, and create and fill out the authorized submittals for your facility.

## 5. Completing a submittal

Overview

This section covers the steps for completing a submittal for your facility/project.

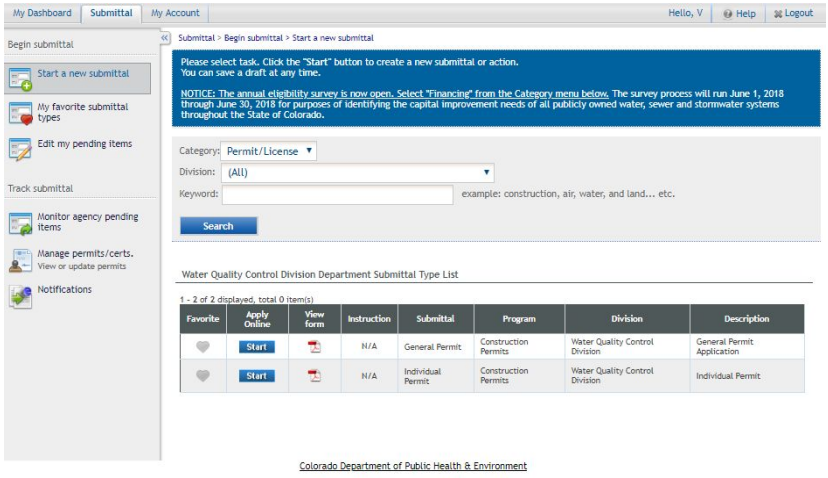
Responsibility

The facility’s RO, or an authorized preparer.

Process

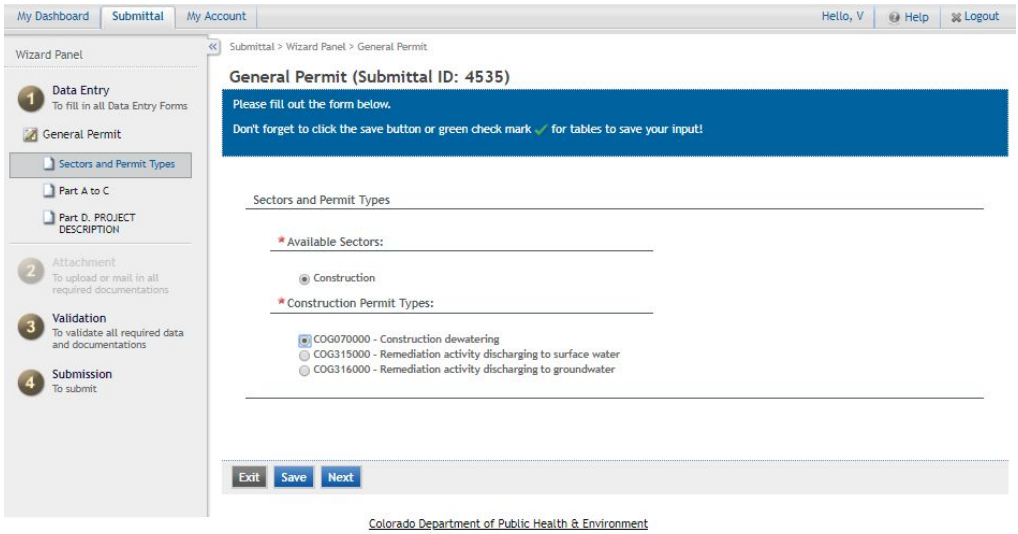
1. From the Landing page, or “My Dashboard” page, click on the “Permits” under Water Quality Control” link. If on any other page, hover your mouse over the “Submittal” tab, and click on “Start a New Submittal”.

2. All Permit submittals will be under the “Permit/License” category and the “Water Quality Control Division” . If you are not seeing any submittals, ensure that “Permit/License” is selected from the “Category” drop-down menu, and click “Search”.

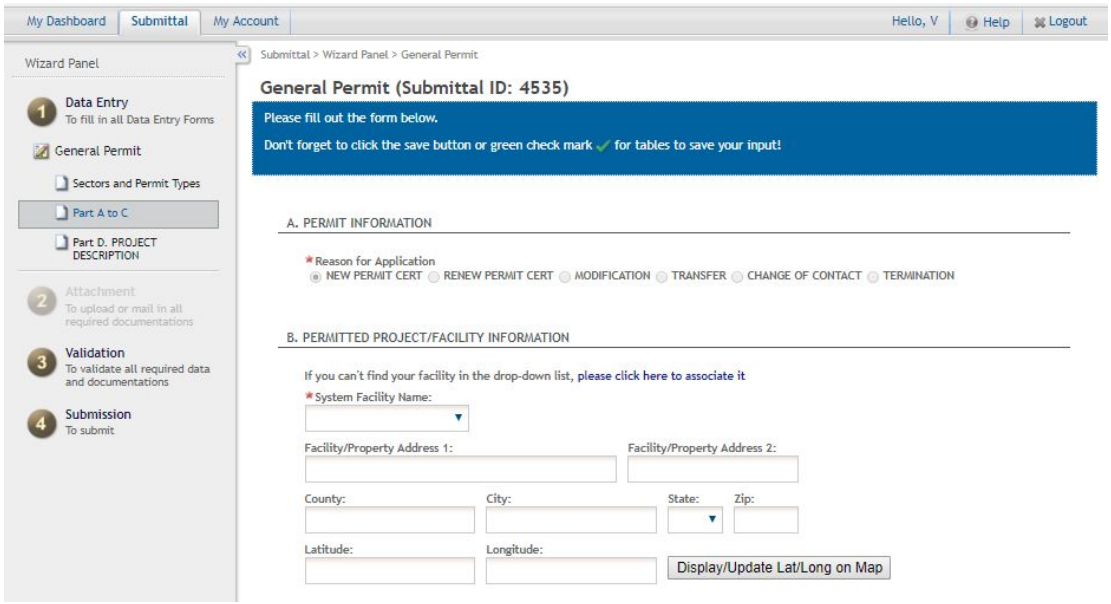



3. Next, find the submittal you wish to begin, and click the “Start” button.
   a. Submittals for General Permits and Individual Permits are unique. If you are an RO for both General and Individual, make sure you select the submittal that corresponds to the correct permit for the project you are currently working on.

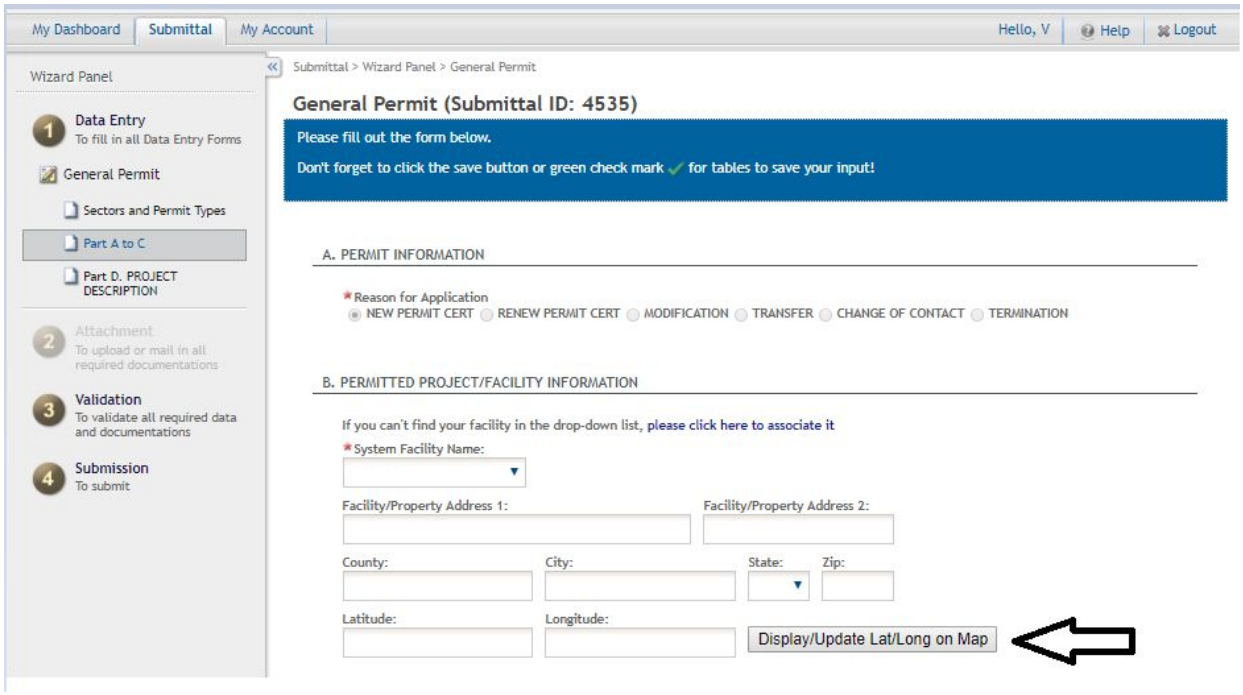
4. Read the information on the page, select the sector and permit type you need, then click “Next”.



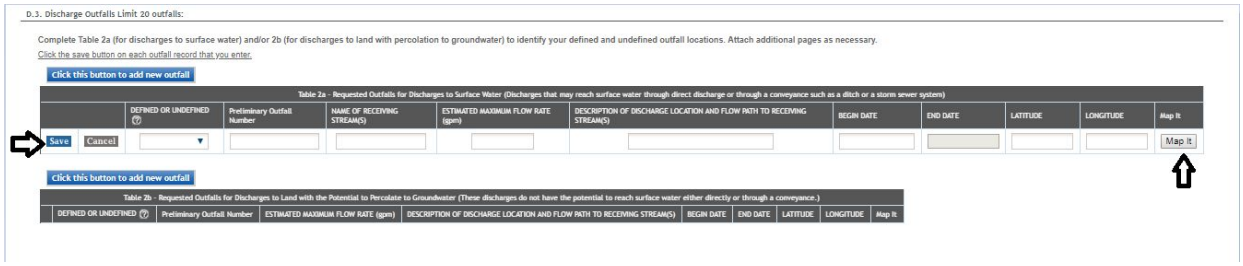

5. Fill out the submittal with the relevant information. Fields marked with a red star are required fields.



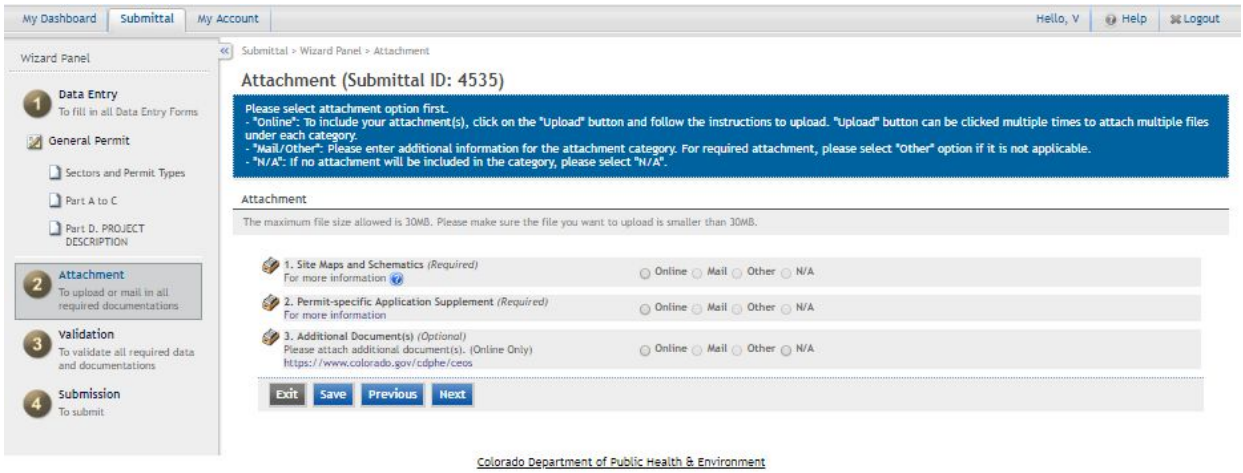

   a. If you miss a required item when you click next, it will prompt you to fill out the boxes or selections that are highlighted in red.
   b. Please use the map it feature to obtain the latitude and longitude of your project.




c. If you wish to save your work and come back to the submittal at a later date, be sure to click the "Save" button at the bottom of the page before closing the page.
d. When you are filling out the outfall table - you must click the "Save" button associated with each record at the left of the table. Clicking on "Save" at the bottom of the page will not save your outfall and generate an error message.
e. Please use the Map it feature to locate your outfalls.



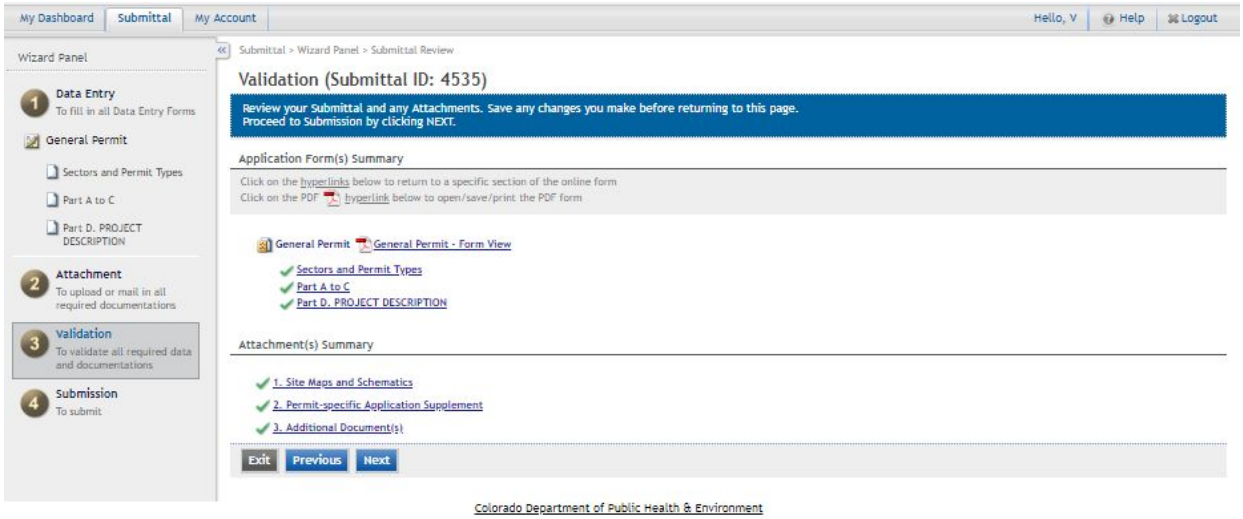

6. Once you have completed filling out any necessary fields, you will be brought to the "Attachments" portion of the submittal.



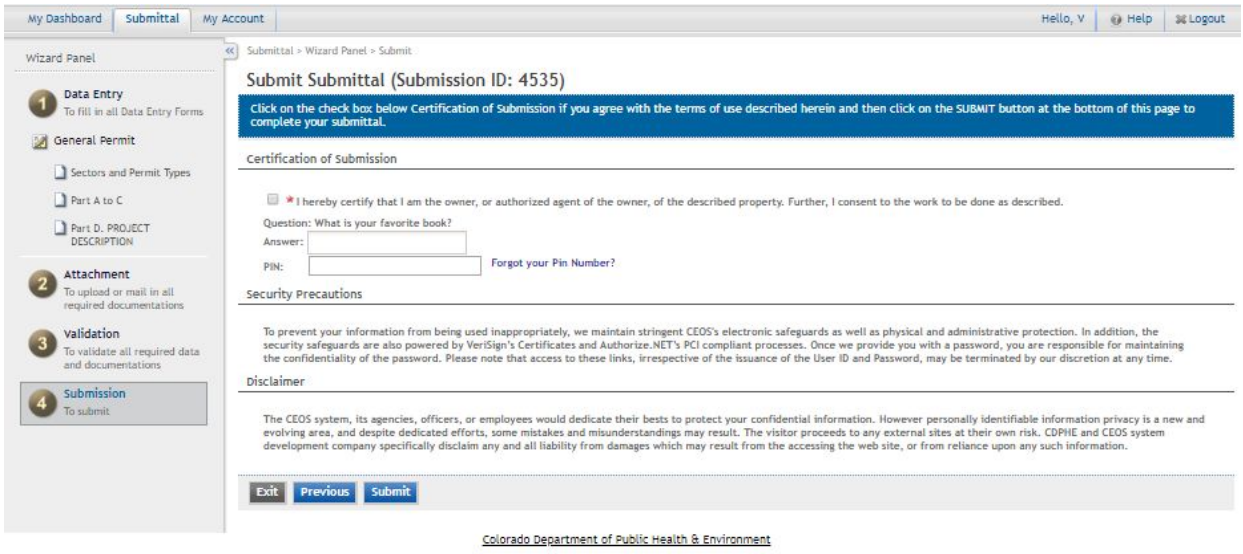

a. To upload any required attachments or supporting documents, click on the "online" button.
b. Next, click on the "Upload" button.
c. Then, click on "Choose File". Navigate to the file you wish to upload, then click "Open"
    i. Repeating steps a and b if you have multiple files to upload.

7. When all of your attachments have been uploaded, click the "Next" button at the bottom of the page.

8. On the "Validation" page, ensure that all of the required fields and attachments have been uploaded by looking for the green checkmark next to each item. Once verifying that all requirements have been met, click the "Next" button.
    a. If you see a red "X", the requirements for the corresponding field or attachment have not been met. Navigate back to that item and ensure that you have answered the required questions, or attached the required documents.



9. On the “Submission” page, click the checkbox to certify that you are the RO, or authorized agent of the RO, of the described property. Verify your identity by answering your security question and filling out your PIN. When complete, click the “Submit” button at the bottom of the page.




10. Your submittal has now been submitted to the division to review. You will get an email notification with any updates to your submittal.
    a. If you are a preparer, your RO will need to sign off through CEOS to submit the application to the division.

## 6. Requesting to Revise or Withdraw a Submittal

Overview

If you need to revise or withdraw a submittal, you can send a request to the division through CEOS  for each submittal.

Responsibility

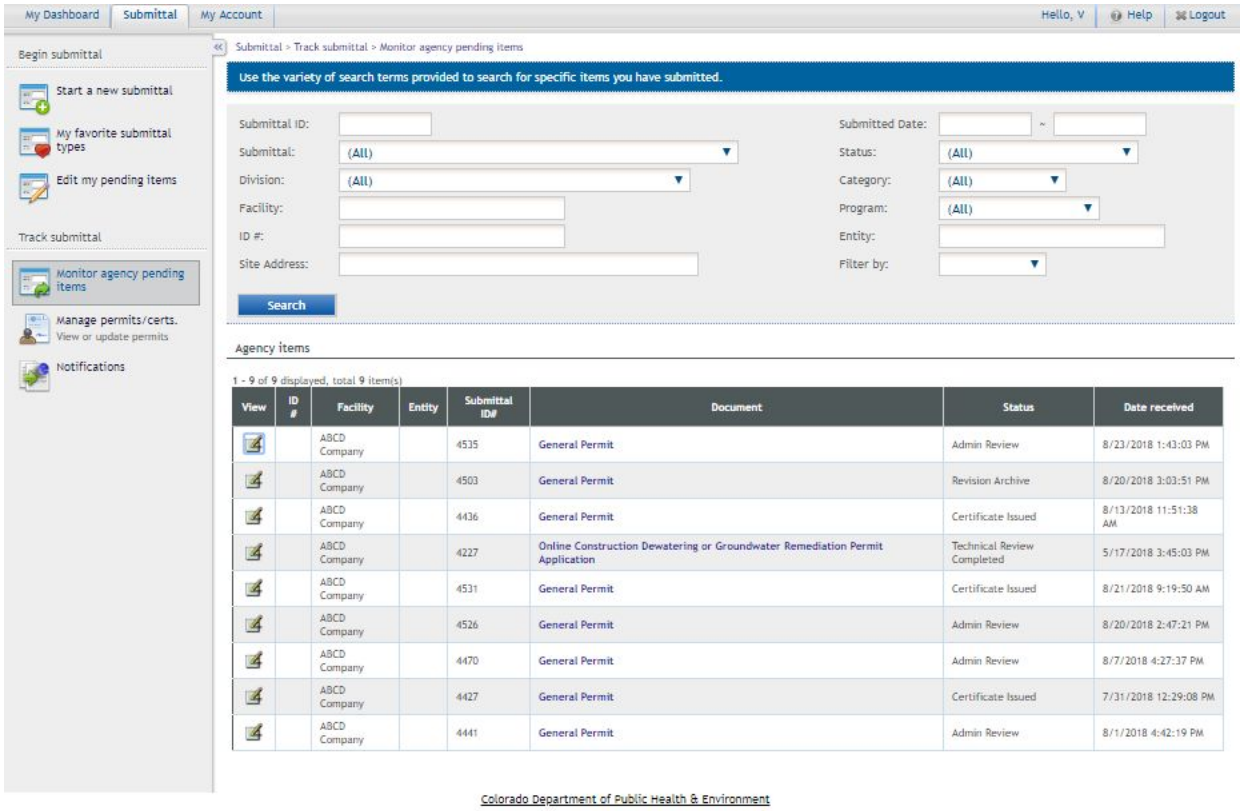
A Responsible Official must initiate a Revise or Withdrawal request unless you gave the Preparer the ability to submit for you.

Process

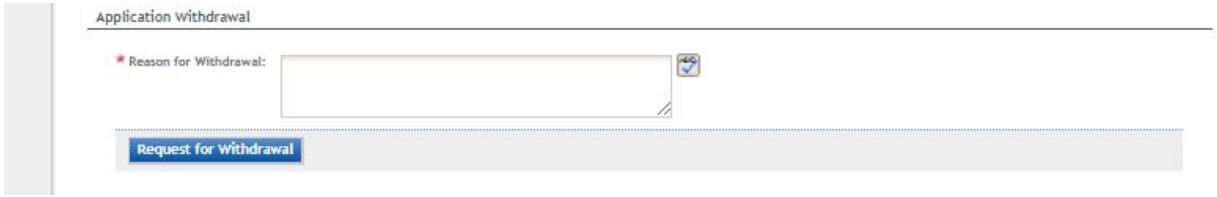
1. Login to your CEOS account, and click “Go to your dashboard”.

2. Hover over the “Submittal” tab, and click on “Monitor agency pending items”, change the category to “Permits/License” and click “Search”.

3. Click on the paper and pencil icon on the left side of the table to view more information about the submittal.




4. To request to withdraw a submittal, find the “Application Withdrawal” section of the page, enter a reason for your request, and click the “Request for Withdrawal” button.
    a. The division will receive a notification and review your request.




5. To request to revise a submittal, find the “Application Revision” section of the page, enter a reason for your request, and click the “Request for Revision” button.
    a. The division will receive a notification and review your request.
    b. Once approved by the division, you will receive a notification, and you will be able to log into CEOS, find and revise your submittal under “My pending items”.

## 7. Monitoring Agency Review and Viewing Issuances

Overview

Once you have submitted a submittal for review, you can monitor the division's review process and view Issuances related to the submittal from the division.

Responsibility

Responsible Officials or preparers can monitor the division's review steps, and view and download Issuances

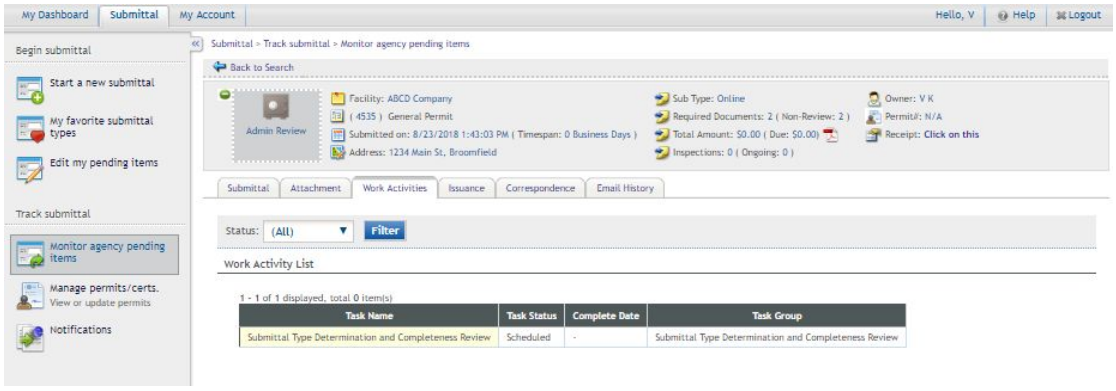
Process

1. Login to your CEOS account, and click "Go to your dashboard".

2. Hover over the "Submittal" tab, and click on "Monitor agency pending items", change the category to "Permit/License" and click "Search".

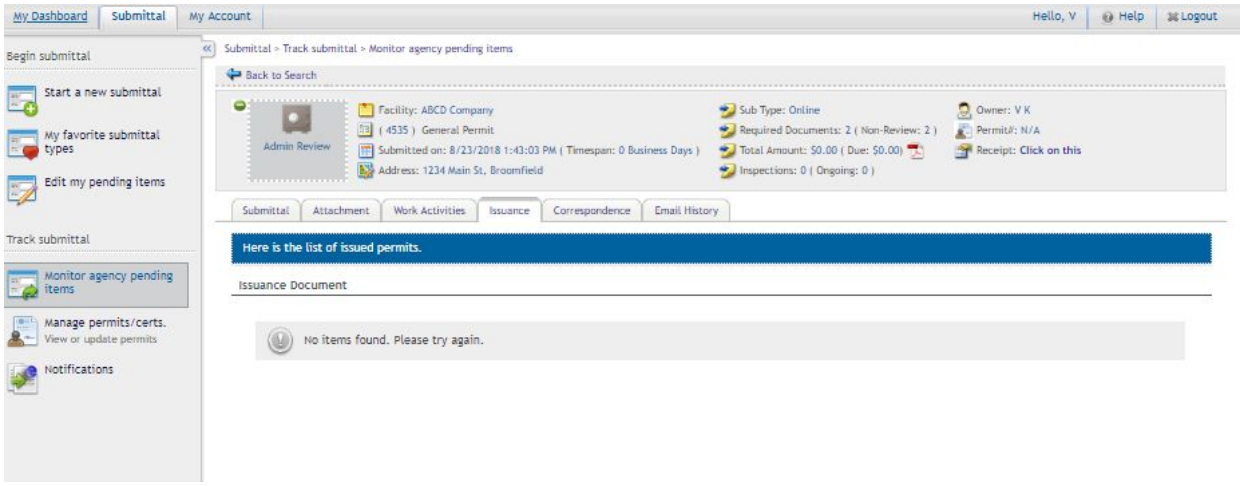
3. Click on the paper and pencil icon on the left side of the table to view more information about the submittal.

4. To view the Agency review process, find and click on the "Work Activities" tab.
    a. The Work Activity List shows an overview of the Agency review process and the current status of the submittal review.




5. To view Issuances from the Agency related to the selected submittal, click on the "Issuances" tab.
    a. To view the Issuances, click on the PDF icon in the table. This will open a new page with a PDF view of the issuance for your review.

b. To download the PDF for your records, click on the “download” icon at the top of the page.




## 8. Further Assistance

If you have additional questions or need assistance with CEOS , please contact us at:
**Email:** cdphe_ceos_support@state.co.us
**CEOS Phone:** 303-691-7919 **Permits Phone:** 303-692-3517

STATE OF COLORADO

**COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT**
**Water Quality Control Division**

CDPS GENERAL PERMIT

STORMWATER DISCHARGES ASSOCIATED WITH

**CONSTRUCTION ACTIVITY**

AUTHORIZATION TO DISCHARGE UNDER THE

COLORADO DISCHARGE PERMIT SYSTEM (CDPS)

In compliance with the provisions of the Colorado Water Quality Control Act, (25-8-101 et seq., CRS, 1973 as amended) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq.; the "Act"), this permit authorizes the discharge of stormwater associated with construction activities (and specific allowable non-stormwater discharges in accordance with Part I.A.1. of the permit) certified under this permit, from those locations specified throughout the State of Colorado to specified waters of the State.

Such discharges shall be in accordance with the conditions of this permit. This permit specifically authorizes the facility listed on the certification to discharge in accordance with permit requirements and conditions set forth in Parts I and II hereof. All discharges authorized herein shall be consistent with the terms and conditions of this permit.

This permit becomes effective on April 1, 2019, and shall expire at midnight March 31, 2024.

Issued and signed this 1st day of November 2018.

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Ellen Howard Kutzer, Permits Section Manager
Water Quality Control Division

**Permit History**
**Originally signed and issued October 31, 2018; effective April 1, 2019.**

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Part I
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## A. COVERAGE UNDER THIS PERMIT

1. Authorized Discharges

This general permit authorizes permittee(s) to discharge the following to state waters: stormwater associated with construction activity and specified non-stormwater associated with construction activity. The following types of stormwater and non-stormwater discharges are authorized under this permit:

a. Allowable Stormwater Discharges

i. Stormwater discharges associated with construction activity.

ii. Stormwater discharges associated with producing earthen materials, such as soils, sand, and gravel dedicated to providing material to a single contiguous site, or within ¼ mile of a construction site (i.e. borrow or fill areas)

iii. Stormwater discharges associated with dedicated asphalt, concrete batch plants and masonry mixing stations (Coverage under this permit is not required if alternative coverage has been obtained.)

b. Allowable Non-Stormwater Discharges

The following non-stormwater discharges are allowable under this permit if the discharges are identified in the stormwater management plan in accordance with Part I.C. and if they have appropriate control measures in accordance with Part I.B.1.

i. Discharges from uncontaminated springs that do not originate from an area of land disturbance.

ii. Discharges to the ground of concrete washout water associated with the washing of concrete tools and concrete mixer chutes. Discharges of concrete washout water must not leave the site as surface runoff or reach receiving waters as defined by this permit.

iii. Discharges of landscape irrigation return flow.

c. Emergency Fire Fighting

Discharges resulting from emergency firefighting activities are authorized by this permit.

2. Limitations on Coverage

Discharges not authorized by this permit include, but are not limited to, the discharges and activities listed below. Permittees may seek individual or alternate general permit coverage for the discharges, as appropriate and available.

a. Discharges of Non-Stormwater

Discharges of non-stormwater, except the authorized non-stormwater discharges listed in Part I.A.1.b., are not eligible for coverage under this permit.

b. Discharges Currently Covered by another Individual or General Permit

c. Discharges Currently Covered by a Water Quality Control Division (division) Low Risk Guidance Document

3. Permit Certification and Submittal Procedures

a. Duty to apply
The following activities shall apply for coverage under this permit:

i. Construction sites that will disturb one acre or more; or

ii. Construction sites that are part of a common plan of development or sale; or

iii. Stormwater discharges that are designated by the division as needing a stormwater permit because the discharge:

(a) Contributes to a violation of a water quality standard; or

(b) is a significant contributor of pollutants to state waters.

b. Application Requirements
To obtain authorization to discharge under this permit, applicants applying for coverage following the effective date of the renewal permit shall meet the following requirements:

i. Owners and operators submitting an application for permit coverage will be co-permittees subject to the same benefits, duties, and obligations under this permit.

ii. Signature requirements: Both the owner and operator (permittee) of the construction site, as defined in Part I.E., must agree to the terms and conditions of the permit and submit a completed application that includes the signature of both the owner and the operator. In cases where the duties of the owner and operator are managed by the owner, both application signatures may be completed by the owner. Both the owner and operator are responsible for ensuring compliance with all terms and conditions of the permit, including implementation of the stormwater management plan.

iii. Applicants must use the paper form provided by the division or the electronic form provided on the division's web-based application platform when applying for coverage under this permit.

iv. The applicant(s) must develop a stormwater management plan (SWMP) in accordance with the requirements of Part I.C. The applicant(s) must also certify that the SWMP is complete, or will be complete, prior to commencement of any construction activity.

v. The applicant(s) must submit a complete, accurate, and signed permit application electronically, by mail or hand delivery to the division at least 10 days prior to the commencement of construction activity except that construction activities that are in response to a public emergency related site shall apply for coverage no later than 14 days after the commencement of construction activities. The provisions of this part in no way remove a violation of the Colorado Water Quality Control Act if a point source discharge occurs prior to the issuance of a CDPS permit.

vi. The application must be signed in accordance with the requirements of Part IA. Applications submitted by mail or hand delivered should be directed to:

Colorado Department of Public Health and Environment
Water Quality Control Division
Permits Section, WQCD-PS-B2
4300 Cherry Creek Drive South
Denver, CO 80246

vii. The applicant(s) must receive written notification that the division granted permit coverage prior to conducting construction activities except for construction activities that are in response to a public emergency related site

c. Division Review of Permit Application

Within 10 days of receipt of the application, and following review of the application, the division may:

i. Issue a certification of coverage;

ii. request additional information necessary to evaluate the discharge;

iii. delay the authorization to discharge pending further review;

iv. notify the applicant that additional terms and conditions are necessary; or

v. deny the authorization to discharge under this general permit.

d. Alternative Permit Coverage

i. Division Required Alternate Permit Coverage:
The Division may require an applicant or permittee to apply for an individual permit or an alternative general permit if it determines the discharge does not fall under the scope of this general permit. In this case, the Division will notify the applicant or permittee that an individual permit application is required.

ii. Permittee Request for alternate permit coverage:
A permittee authorized to discharge stormwater under this permit may request to be excluded from coverage under this general permit by applying for an individual permit. In this case, the permittee must submit an individual application, with reasons supporting the request, to the Division at least 180 days prior to any discharge. When an individual permit is issued, the permittee's authorization to discharge under this permit is terminated on the effective date of the individual permit.

e. Submittal Signature Requirements

Documents required for submittal to the division in accordance with this permit, including applications for permit coverage and other documents as requested by the division, must include signatures by both the owner and the operator, except for instances where the duties of the owner and operator are managed by the owner.

Signatures on all documents submitted to the division as required by this permit must meet the Standard Signatory Requirements in Part II.K. of this permit in accordance with 40 C.F.R. 122.41(k).

i. Signature Certification
Any person(s) signing documents required for submittal to the Division must make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

f. Compliance Document Signature Requirements
Documents which are required for compliance with the permit, but for which submittal to the division is not required unless specifically requested by the division, must be signed by the individual(s) designated as the Qualified Stormwater Manager, as defined in Part I.E.

i. Any person(s) signing inspection documents required for compliance with the permit must make the following statement:

"I verify that, to the best of my knowledge and belief, all corrective action and maintenance items identified during the inspection are complete, and the site is currently in compliance with the permit."

g. Field Wide Permit Coverage for Oil and Gas Construction
At the discretion of the division, a single permit certification may be issued to a single oil and gas permittee to cover construction activity related discharges from an oil and gas field at multiple locations that are not necessarily contiguous.

h. Permit Coverage without Application
Qualifying Local Program: When a small construction site is within the jurisdiction of a qualifying local program, the owner and operator of the construction activity are authorized to discharge stormwater associated with small construction activity under this general permit without the submittal of an application to the division. Sites covered by a qualifying local program are exempt from the following sections of this general permit:

Part I.A.3.a.; Part I.A.3.b.; Part I.A.3.c.; Part I.A.3.d.; Part I.A.3.g.; Part I.A.3.i.; Part I.A.3.j.; Part I.A.3.k.

Sites covered by a qualifying local program are subject to the following requirements:

i. Local Agency Authority: This permit does not pre-empt or supersede the authority of local agencies to prohibit, restrict, or control discharges of stormwater to storm drain systems or other water courses within their jurisdiction.

ii. Permit Coverage Termination: When a site under a Qualifying Local Program is finally stabilized, coverage under this permit is automatically terminated.

iii. Compliance with Qualifying Local Program: Qualifying Local Program requirements that are equivalent to the requirements of this permit are incorporated by reference. Permittees authorized to discharge under this permit, must comply with the equivalent requirements of the Qualifying Local Program that has jurisdiction over the site as a condition of this permit.

iv. Compliance with Remaining Permit Conditions. Requirements of this permit that are in addition to or more stringent than the requirements of the Qualifying Local Program apply in addition to the requirements of the Qualifying Local Program.

v. Written Authorization of Coverage: The division or local municipality may require any permittee within the jurisdiction of a Qualifying Local Program covered under this permit to apply for, and obtain written authorization of coverage under this permit. The permittee must be notified in writing that an application for written authorization of coverage is required.

i. Permittee Initiated Permit Actions

Permittee initiated permit actions, including but not limited to modifications, contact changes, transfers, reassignments, and terminations, shall be conducted following division guidance and using appropriate division-provided forms.

j. Sale of Residence to Homeowner

**Residential construction sites only**: The permittee may remove residential lots from permit coverage once the lot meets the following criteria:

i. the residential lot has been sold to the homeowner(s) for private residential use;

ii. a certificate of occupancy, or equivalent, is maintained on-site and is available during division inspections;

iii. the lot is less than one acre of disturbance;

iv. all construction activity conducted on the lot by the permittee is complete;

v. the permittee is not responsible for final stabilization of the lot; and

vi. the SWMP was modified to indicate the lot is no longer part of the construction activity.

If the residential lot meets the criteria listed above then activities occurring on the lot are no longer considered to be construction activities with a duty to apply and maintain permit coverage. Therefore, the permittee is not required to meet the final stabilization requirements and may terminate permit coverage for the lot.

k. Permit Expiration and Continuation of Permit Coverage

Authorization to discharge under this general permit shall expire at midnight on March 31, 2024. While Regulation 61.4 requires a permittee to submit an application for continuing permit coverage 180 days before the permit expires, the division is requiring that permittees desiring continued coverage under this general permit must reapply at least 90 days in advance of this permit expiration. The Division will determine if the permittee may continue to discharge stormwater under the terms of the general permit. An individual permit may be required for any facility not reauthorized to discharge under the reissued general permit.

If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued and remain in force and effect. For permittees that have applied for continued permit coverage, discharges authorized under this permit prior to the expiration date will automatically remain covered by this permit until the earliest of:

i. An authorization to discharge under a reissued permit, or a replacement of this permit, following the timely and appropriate submittal of a complete application requesting authorization to discharge under the new permit and compliance with the requirements of the new permit; or

ii. The issuance and effect of a termination issued by the Division; or

iii. The issuance or denial of an individual permit for the facility's discharges; or

iv. A formal permit decision by the Division not to reissue this general permit, at which time the Division will identify a reasonable time period for covered dischargers to seek coverage under an alternative general permit or an individual permit. Coverage under this permit will cease when coverage under another permit is granted/authorized; or

v. The Division has informed the permittee that discharges previously authorized under this permit are no longer covered under this permit.

## B. EFFLUENT LIMITATIONS

1. Requirements for Control Measures Used to Meet Effluent Limitations

The permittee must implement control measures to minimize the discharge of pollutants from all potential pollutant sources at the site. Control measures must be installed prior to commencement of activities that may contribute pollutants to stormwater discharges. Control measures must be selected, designed, installed and maintained in accordance with good engineering, hydrologic and pollution control practices. Control measures implemented at the site must be designed to prevent pollution or degradation of state waters.

a. Stormwater Pollution Prevention

The permittee must implement structural and/or nonstructural control measures that effectively minimize erosion, sediment transport, and the release of other pollutants related to construction activity.

i. Control Measures for Erosion and Sediment Control

Control measures for erosion and sediment control may include, but are not limited to, wattles/sediment control logs, silt fences, earthen dikes, drainage swales, sediment traps, subsurface drains, pipe slope drains, inlet protection, outlet protection, gabions, sediment basins, temporary vegetation, permanent vegetation, mulching, geotextiles, sod stabilization, slope roughening, maintaining existing vegetation, protection of trees, and preservation of mature vegetation. Specific non-structural control measures must meet the requirements listed below.

Specific control measures must meet the requirements listed below.

(a) Vehicle tracking controls shall either be implemented to minimize vehicle tracking of sediment from disturbed areas, or the areas where vehicle tracking occurs shall meet subsection Part I.B.1.a.i(b);

(b) Stormwater runoff from all disturbed areas and soil storage areas for which permanent or temporary stabilization is not implemented, must flow to at least one control measure to minimize sediment in the discharge. This may be accomplished through filtering, settling, or straining. The control measure must be selected, designed, installed and adequately sized in accordance with good engineering, hydrologic and pollution control practices. The control measure(s) must contain or filter flows in order to prevent the bypass of flows without treatment and must be appropriate for stormwater runoff from disturbed areas and for the expected flow rate, duration, and flow conditions (i.e., sheet or concentrated flow);

(c) Outlets that withdraw water from or near the surface shall be installed when discharging from basins and impoundments, unless infeasible.

(d) Maintain pre-existing vegetation or equivalent control measures for areas within 50 horizontal feet of receiving waters as defined by this permit, unless infeasible.

(e) Soil compaction must be minimized for areas where infiltration control measures will occur or where final stabilization will be achieved through vegetative cover.

(f) Unless infeasible, topsoil shall be preserved for those areas of a site that will utilize vegetative final stabilization.

(g) Minimize the amount of soil exposed during construction activity, including the disturbance of steep slopes.

ii. Practices for Other Common Pollutants

(a) Bulk storage, 55 gallons or greater, for petroleum products and other liquid chemicals must have secondary containment, or equivalent protection, in order to contain spills and to prevent spilled material from entering state waters.

(b) Control measures designed for concrete washout waste must be implemented. This includes washout waste discharged to the ground as authorized under this permit and washout waste from concrete trucks and masonry operations contained on site. The permittee must ensure the washing activities do not contribute pollutants to stormwater runoff, or receiving waters in accordance Part I.A.1.b.ii. Discharges that may reach groundwater must flow through soil

that has buffering capacity prior to reaching groundwater, as necessary to meet the effluent limits in this permit, including Part I.B.3.a. The concrete washout location shall be not be located in an area where shallow groundwater may be present and would result in buffering capacity not being adequate, such as near natural drainages, springs, or wetlands. This permit authorizes discharges to the ground of concrete washout waste.

iii. Stabilization Requirements
The following requirements must be implemented for each site.

(a) Temporary stabilization must be implemented for earth disturbing activities on any portion of the site where ground disturbing construction activity has permanently ceased, or temporarily ceased for more than 14 calendar days. Temporary stabilization methods may include, but are not limited to, tarps, soil tackifier, and hydroseed. The permittee may exceed the 14-day schedule when either the function of the specific area of the site requires it to remain disturbed, or, physical characteristics of the terrain and climate prevent stabilization. The SWMP must document the constraints necessitating the alternative schedule, provide the alternate stabilization schedule, and identify all locations where the alternative schedule is applicable on the site map.

(b) Final stabilization must be implemented for all construction sites. Final stabilization is reached when all ground surface disturbing activities at the construction site are complete; and, for all areas of ground surface disturbing activities, either a uniform vegetative cover with an individual plant density of at least 70 percent of pre-disturbance levels is established, or equivalent permanent alternative stabilization methods are implemented. The division may approve alternative final stabilization criteria for specific operations.

(c) Final stabilization must be designed and installed as a permanent feature. Final stabilization measures for obtaining a vegetative cover or alternative stabilization methods include, but are not limited to, the following as appropriate:

(1) Seed mix selection and application methods;

(2) Soil preparation and amendments;

(3) Soil stabilization methods (e.g., crimped straw, hydro mulch or rolled erosion control products);

(4) Appropriate sediment control measures as needed until final stabilization is achieved;

(5) Permanent pavement, hardscape, xeriscape, stabilized driving surfaces;

(6) Other alternative stabilization practices as applicable;

(d) The permittee(s) must ensure all temporary control measures are removed from the construction site once final stabilization is achieved, except when the control measure specifications allow the control measure to be left in place (i.e., bio-degradable control measures).

b. Maintenance

The permittee must ensure that all control measures remain in effective operating condition and are protected from activities that would reduce their effectiveness. Control measures must be maintained in accordance with good engineering, hydrologic and pollution control practices. Observations leading to the required maintenance of control measures can be made during a site inspection, or during general observations of site conditions. The necessary repairs or modifications to a control measure requiring routine maintenance, as defined in Part I.E., must be conducted to maintain an effective operating condition. This section is not subject to the requirements in Part I.B.1.c. below.

c. Corrective Actions

The permittee must assess the adequacy of control measures at the site, and the need for changes to those control measures, to ensure continued effective performance. When an inadequate control measure, as defined in Part I.E., is identified (i.e., new or replacement control measures become necessary), the following corrective action requirements apply. The permittee is in noncompliance with the permit until the inadequate control measure is replaced or corrected and returned to effective operating condition in compliance with Part I.B.1. and the general requirements in Part I.B.3. If the inadequate control measure results in noncompliance that meets the conditions of Part II.L., the permittee must also meet the requirements of that section.

i. The permittee must take all necessary steps to minimize or prevent the discharge of pollutants, until a control measure is implemented and made operational and/or an inadequate control measure is replaced or corrected and returned to effective operating condition. If it is infeasible to install or repair of control measure immediately after discovering the deficiency, the following must be documented and kept on record in accordance with the recordkeeping requirements in Part II.

(a) Describe why it is infeasible to initiate the installation or repair immediately; and

(b) Provide a schedule for installing or repairing the control measure and returning it to an effective operating condition as soon as possible.

ii. If applicable, the permittee must remove and properly dispose of any unauthorized release or discharge (e.g., discharge of non-stormwater, spill, or leak not authorized by this permit.) The permittee must also clean up any contaminated surfaces to minimize discharges of the material in subsequent storm events.

2. Discharges to an Impaired Waterbody

a. Total Maximum Daily Load (TMDL)

If the permittee's discharge flows to or could reasonably be expected to flow to any water body for which a TMDL has been approved, and stormwater discharges

associated with construction activity were assigned a pollutant-specific Wasteload Allocation (WLA) under the TMDL, the division may:

**i.** ensure the WLA is implemented properly through alternative local requirements, such as by a municipal stormwater permit; or

**ii.** notify the permittee of the WLA and amend the permittee's certification to add specific effluent limits and other requirements, as appropriate. The permittee may be required to do the following:

(a) under the permittee's SWMP, implement specific control measures based on requirements of the WLA, and evaluate whether the requirements are met through implementation of existing stormwater control measures or if additional control measures are necessary. Document the calculations or other evidence demonstrating that the requirements are expected to be met; and

(b) if the evaluation shows that additional or modified control measures are necessary, describe the type and schedule for the control measure additions or modifications.

iii. Discharge monitoring may also be required. The permittee may maintain coverage under the general permit provided they comply with the applicable requirements outlined above. The division reserves the right to require individual or alternate general permit coverage.

3. General Requirements

a. Discharges authorized by this permit shall not cause, have the reasonable potential to cause, or measurably contribute to an exceedance of any applicable water quality standard, including narrative standards for water quality.

b. The division may require sampling and testing, on a case-by-case basis, in the event that there is reason to suspect that the SWMP is not adequately minimizing pollutants in stormwater or in order to measure the effectiveness of the control measures in removing pollutants in the effluent. Such monitoring may include Whole Effluent Toxicity testing.

c. The permittee must comply with the lawful requirements of federal agencies, municipalities, counties, drainage districts and other local agencies including applicable requirements in Municipal Stormwater Management Programs developed to comply with CDPS permits. The permittee must comply with local stormwater management requirements, policies and guidelines including those for erosion and sediment control.

d. All construction site wastes must be properly managed to prevent potential pollution of state waters. This permit does not authorize on-site waste disposal.

e. This permit does not relieve the permittee of the reporting requirements in 40 CFR 110, 40 CFR 117 or 40 CFR 302. Any discharge of hazardous material must be handled in accordance with the division's Noncompliance Notification Requirements (see Part II.L. of the permit).

## C. STORMWATER MANAGEMENT PLAN (SWMP) REQUIREMENTS

1. SWMP General Requirements

   a. A SWMP shall be developed for each construction site covered by this permit. The SWMP must be prepared in accordance with good engineering, hydrologic and pollution control practices.

      i. For public emergency related sites a SWMP shall be created no later than 14 days after the commencement of construction activities.

   b. The permittee must implement the provisions of the SWMP as written and updated, from commencement of construction activity until final stabilization is complete. The division may review the SWMP.

   c. A copy of the SWMP must be retained onsite or be onsite when construction activities are occurring at the site unless the permittee specifies another location and obtains approval from the division.

2. SWMP Content

   a. The SWMP, at a minimum, must include the following elements.

      i. Qualified Stormwater Manager. The SWMP must list individual(s) by title and name who are designated as the site's qualified stormwater manager(s) responsible for implementing the SWMP in its entirety. This role may be filled by more than one individual.

      ii. Spill Prevention and Response Plan. The SWMP must have a spill prevention and response plan. The plan may incorporate by reference any part of a Spill Prevention Control and Countermeasure (SPCC) plan under section 311 of the Clean Water Act (CWA) or a Spill Prevention Plan required by a separate CDPS permit. The relevant sections of any referenced plans must be available as part of the SWMP consistent with Part I.C.4.

      iii. Materials Handling. The SWMP must describe and locate all control measures implemented at the site to minimize impacts from handling significant materials that could contribute pollutants to runoff. These handling procedures can include control measures for pollutants and activities such as, exposed storage of building materials, paints and solvents, landscape materials, fertilizers or chemicals, sanitary waste material, trash and equipment maintenance or fueling procedures.

      iv. Potential Sources of Pollution. The SWMP must list all potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges associated with construction activity from the site. This shall include, but is not limited to, the following pollutant sources:

         (a) disturbed and stored soils;

         (b) vehicle tracking of sediments;

         (c) management of contaminated soils;

         (d) loading and unloading operations;

(e) outdoor storage activities (erodible building materials, fertilizers, chemicals, etc.);

(f) vehicle and equipment maintenance and fueling;

(g) significant dust or particulate generating processes (e.g., saw cutting material, including dust);

(h) routine maintenance activities involving fertilizers, pesticides, herbicides, detergents, fuels, solvents, oils, etc.;

(i) on-site waste management practices (waste piles, liquid wastes, dumpsters);

(j) concrete truck/equipment washing, including washing of the concrete truck chute and associated fixtures and equipment;

(k) dedicated asphalt, concrete batch plants and masonry mixing stations;

(l) non-industrial waste sources such as worker trash and portable toilets.

v. Implementation of Control Measures. The SWMP must include design specifications that contain information on the implementation of the control measure in accordance with good engineering hydrologic and pollution control practices; including as applicable drawings, dimensions, installation information, materials, implementation processes, control measure-specific inspection expectations, and maintenance requirements.

The SWMP must include a documented use agreement between the permittee and the owner or operator of any control measures located outside of the permitted area, that are utilized by the permittee's construction site for compliance with this permit, but not under the direct control of the permittee. The permittee is responsible for ensuring that all control measures located outside of their permitted area, that are being utilized by the permittee's construction site, are properly maintained and in compliance with all terms and conditions of the permit. The SWMP must include all information required of and relevant to any such control measures located outside the permitted area, including location, installation specifications, design specifications and maintenance requirements.

vi. Site Description. The SWMP must include a site description which includes, at a minimum, the following:

(a) the nature of the construction activity at the site;

(b) the proposed schedule for the sequence for major construction activities and the planned implementation of control measures for each phase. (e.g.: clearing, grading, utilities, vertical, etc.);

(c) estimates of the total acreage of the site, and the acreage expected to be disturbed by clearing, excavation, grading, or any other construction activities;

(d) a summary of any existing data used in the development of the construction site plans or SWMP that describe the soil or existing potential for soil erosion;

(e) a description of the percent of existing vegetative ground cover relative to the entire site and the method for determining the percentage;

(f) a description of any allowable non-stormwater discharges at the site, including those being discharged under a division low risk discharge guidance policy;

(g) a description of areas receiving discharge from the site. Including a description of the immediate source receiving the discharge. If the stormwater discharge is to a municipal separate storm sewer system, the name of the entity owning that system, the location of the storm sewer discharge, and the ultimate receiving water(s); and

(h) a description of all stream crossings located within the construction site boundary.

vii. Site Map. The SWMP must include a site map which includes, at a minimum, the following:

(a) construction site boundaries;

(b) flow arrows that depict stormwater flow directions on-site and runoff direction;

(c) all areas of ground disturbance including areas of borrow and fill;

(d) areas used for storage of soil;

(e) locations of all waste accumulation areas, including areas for liquid, concrete, masonry, and asphalt;

(f) locations of dedicated asphalt, concrete batch plants and masonry mixing stations;

(g) locations of all structural control measures;

(h) locations of all non-structural control measures;

(i) locations of springs, streams, wetlands and other state waters, including areas that require pre-existing vegetation be maintained within 50 feet of a receiving water, where determined feasible in accordance with Part I.B.1.a.i.(d).; and

(j) locations of all stream crossings located within the construction site boundary.

viii. Final Stabilization and Long Term Stormwater Management. The SWMP must describe the practices used to achieve final stabilization of all disturbed areas at the site and any planned practices to control pollutants in stormwater discharges that will occur after construction operations are completed. Including but not limited to, detention/retention ponds, rain gardens, stormwater vaults, etc.

ix. Inspection Reports. The SWMP must include documented inspection reports in accordance with Part ID.

3. SWMP Review and Revisions

Permittees must keep a record of SWMP changes made that includes the date and identification of the changes. The SWMP must be amended when the following occurs:

a. a change in design, construction, operation, or maintenance of the site requiring implementation of new or revised control measures;

b. the SWMP proves ineffective in controlling pollutants in stormwater runoff in compliance with the permit conditions;

c. control measures identified in the SWMP are no longer necessary and are removed; and

d. corrective actions are taken onsite that result in a change to the SWMP.

For SWMP revisions made prior to or following a change(s) onsite, including revisions to sections addressing site conditions and control measures, a notation must be included in the SWMP that identifies the date of the site change, the control measure removed, or modified, the location(s) of those control measures, and any changes to the control measure(s). The permittee must ensure the site changes are reflected in the SWMP. The permittee is noncompliant with the permit until the SWMP revisions have been made.

4. SWMP Availability

A copy of the SWMP must be provided upon request to the division, EPA, and any local agency with authority for approving sediment and erosion plans, grading plans or stormwater management plans within the time frame specified in the request. If the SWMP is required to be submitted to any of these entities, the submission must include a signed certification in accordance with Part I.A.3.e., certifying that the SWMP is complete and compliant with all terms and conditions of the permit.

All SWMPs required under this permit are considered reports that must be available to the public under Section 308(b) of the CWA and Section 61.5(4) of the CDPS regulations. The permittee must make plans available to members of the public upon request. However, the permittee may claim any portion of a SWMP as confidential in accordance with 40 CFR Part 2.

## D. SITE INSPECTIONS

Site inspections must be conducted in accordance with the following requirements. The required inspection schedules are a minimum frequency and do not affect the permittee's responsibility to implement control measures in effective operating condition as prescribed in the SWMP. Proper maintenance of control measures may require more frequent inspections. Site inspections shall start within 7 calendar days of the commencement of construction activities on site.

1. Person Responsible for Conducting Inspections

The person(s) inspecting the site may be on the permittee's staff or a third party hired to conduct stormwater inspections under the direction of the permittee(s). The permittee is responsible for ensuring that the inspector is a qualified stormwater manager.

2. Inspection Frequency

Permittees must conduct site inspections in accordance with one of the following minimum frequencies, unless the site meets the requirements of Part ID.3

a. At least one inspection every 7 calendar days. Or

b. At least one inspection every 14 calendar days, if post-storm event inspections are conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosion. Post-storm inspections may be used to fulfill the 14-day routine inspection requirement.

c. When site conditions make the schedule required in this section impractical, the permittee may petition the Division to grant an alternate inspection schedule. The alternative inspection schedule may not be implemented prior to written approval by the division and incorporation into the SWMP.

3. Inspection Frequency for Discharges to Outstanding Waters

Permittees must conduct site inspections at least once every 7 calendar days for sites that discharge to a water body designated as an Outstanding Water by the Water Quality Control Commission.

4. Reduced Inspection Frequency

The permittee may perform site inspections at the following reduced frequencies when one of the following conditions exists:

a. Post-Storm Inspections at Temporarily Idle Sites
For permittees choosing to combine 14-day inspections and post-storm-event-inspections, if no construction activities will occur following a storm event, post-storm event inspections must be conducted prior to re-commencing construction activities, but no later than 72 hours following the storm event. The delay of any post-storm event inspection must be documented in the inspection record. Routine inspections must still be conducted at least every 14 calendar days.

b. Inspections at Completed Sites/Areas
When the site, or portions of a site are awaiting establishment of a vegetative ground cover and final stabilization, the permittee must conduct a thorough inspection of the stormwater management system at least once every 30 days. Post-storm event inspections are not required under this schedule. This reduced inspection schedule is allowed if all of the following criteria are met:

i. all construction activities resulting in ground disturbance are complete;

ii. all activities required for final stabilization, in accordance with the SWMP, have been completed, with the exception of the application of seed that has not occurred due to seasonal conditions or the necessity for additional seed application to augment previous efforts; and

iii. the SWMP has been amended to locate those areas to be inspected in accordance with the reduced schedule allowed for in this paragraph.

c. Winter Conditions Inspections Exclusion

Inspections are not required for sites that meet all of the following conditions: construction activities are temporarily halted, snow cover exists over the entire site for an extended period, and melting conditions posing a risk of surface erosion do not exist. This inspection exception is applicable only during the period where melting conditions do not exist, and applies to the routine 7-day, 14-day and monthly inspections, as well as the post-storm-event inspections. When this inspection exclusion is implemented, the following information must be documented in accordance with the requirements in Part II:

i. dates when snow cover existed;

ii. date when construction activities ceased; and

iii. date melting conditions began.

5. Inspection Scope

a. Areas to be Inspected

When conducting a site inspection the following areas, if applicable, must be inspected for evidence of, or the potential for, pollutants leaving the construction site boundaries, entering the stormwater drainage system, or discharging to state waters:

i. construction site perimeter;

ii. all disturbed areas;

iii. designated haul routes;

iv. material and waste storage areas exposed to precipitation;

v. locations where stormwater has the potential to discharge offsite; and

vi. locations where vehicles exit the site.

b. Inspection Requirements

i. Visually verify whether all implemented control measures are in effective operational condition and are working as designed in their specifications to minimize pollutant discharges.

ii. Determine if there are new potential sources of pollutants.

iii. Assess the adequacy of control measures at the site to identify areas requiring new or modified control measures to minimize pollutant discharges.

iv. Identify all areas of non–compliance with the permit requirements and, if necessary, implement corrective action in accordance with Part IB.1.c.

c. Inspection Reports

The permittee must keep a record of all inspections conducted for each permitted site. Inspection reports must identify any incidents of noncompliance with the terms and conditions of this permit. Inspection records must be retained in accordance with Part II.O. and signed in accordance with Part I.A.3.f. At a minimum, the inspection report must include:

i. the inspection date;

ii. name(s) and title(s) of personnel conducting the inspection;

iii. weather conditions at the time of inspection;

iv. phase of construction at the time of inspection;

v. estimated acreage of disturbance at the time of inspection

vi. location(s) of discharges of sediment or other pollutants from the site;

vii. location(s) of control measures needing maintenance;

viii. location(s) and identification of inadequate control measures;

ix. location(s) and identification of additional control measures are needed that were not in place at the time of inspection;

x. description of the minimum inspection frequency (either in accordance with Part I.D.2., I.D.3. or I.D.4.) utilized when conducting each inspection.

xi. deviations from the minimum inspection schedule as required in Part I.D.2.;

xii. after adequate corrective action(s) and maintenance have been taken, or where a report does not identify any incidents requiring corrective action or maintenance, the report shall contain a statement as required in Part I.A.3.f.

## E. DEFINITIONS

For the purposes of this permit:

(1) Bypass - the intentional diversion of waste streams from any portion of a treatment facility in accordance with 40 CFR 122.41(m)(1)(i) and Regulation 61.2(12).

(2) Common Plan of Development or Sale - A contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules, but remain related. The Division has determined that "contiguous" means construction activities located in close proximity to each other (within ¼ mile). Construction activities are considered to be "related" if they share the same development plan, builder or contractor, equipment, storage areas, etc. "Common plan of development or sale" includes construction activities that are associated with the construction of field wide oil and gas permits for facilities that are related.

(3) Construction Activity - Ground surface disturbing and associated activities (land disturbance), which include, but are not limited to, clearing, grading, excavation, demolition, installation of new or improved haul roads and access roads, staging areas, stockpiling of fill materials, and borrow areas. Construction does not include routine maintenance to maintain the original line and grade, hydraulic capacity, or original purpose of the facility. Activities to conduct repairs that are not part of routine maintenance or for replacement are construction activities and are not routine maintenance. Repaving activities where underlying and/or surrounding soil is exposed as part of the repaving operation are considered construction activities. Construction activity is from initial ground breaking to final stabilization regardless of ownership of the construction activities.

(4) Control Measure - Any best management practice or other method used to prevent or reduce the discharge of pollutants to state waters. Control measures include, but are not limited to, best management practices. Control measures can include other methods such as the installation, operation, and maintenance of structural controls and treatment devices.

(5) Control Measure Requiring Routine Maintenance - Any control measure that is still operating in accordance with its design and the requirements of this permit, but requires maintenance to prevent a breach of the control measure. See also inadequate control measure.

(6) Dedicated Asphalt, Concrete Batch Plants and Masonry Mixing Stations – are batch plants or mixing stations located on, or within ¼ mile of, a construction site and that provide materials only to that specific construction site.

(7) Final Stabilization - The condition reached when all ground surface disturbing activities at the site have been completed, and for all areas of ground surface disturbing activities where a uniform vegetative cover has been established with an individual plant density of at least 70 percent of pre-disturbance levels, or equivalent permanent, physical erosion reduction methods have been employed.

(8) Good Engineering, Hydrologic and Pollution Control Practices: are methods, procedures, and practices that:
   a. Are based on basic scientific fact(s).
   b. Reflect best industry practices and standards.
   c. Are appropriate for the conditions and pollutant sources.
   d. Provide appropriate solutions to meet the associated permit requirements, including practice based effluent limits.

(9) Inadequate Control Measure - Any control measure that is not designed or implemented in accordance with the requirements of the permit and/or any control measure that is not implemented to operate in accordance with its design. See also Control Measure Requiring Routine Maintenance.

(10) Infeasible – Not technologically possible, or not economically practicable and achievable in light of best industry practices.

(11) Minimize - reduce or eliminate to the extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice.

(12) Municipality - A city, town, county, district, association, or other public body created by, or under, State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or a designated and approved management agency under section 208 of CWA (1987).

(13) Municipal Separate Storm Sewer System (MS4) - A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

   a) owned or operated by a State, city, town, county, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or a designated and approved management agency under section 208 of the CWA that discharges to state waters;

      i. designed or used for collecting or conveying stormwater;
      ii. are not a combined sewer; and
      iii. are not part of a Publicly Owned Treatment Works (POTW). See 5 CCR 1002-61.2(62).

(14) Municipal Stormwater Management Program - A stormwater program operated by a municipality, typically to meet the requirements of the municipalities MS4 discharge certification.

(15) Operator - The party that has operational control over day-to-day activities at a project site which are necessary to ensure compliance with the permit. This party is authorized to direct individuals at a site to carry out activities required by the permit.(e.g. the general contractor)

(16) Owner - The party that has overall control of the activities and that has funded the implementation of the construction plans and specifications. This is the party with ownership of, a long term lease of, or easements on the property on which the construction activity is occurring (e.g., the developer).

(17) Permittee(s) - The owner and operator named in the discharge certification issued under this permit for the construction site specified in the certification.

(18) Point Source - Any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. Point source does not include irrigation return flow. See 5 CCR 102-61.2(75).

(19) Pollutant - Dredged spoil, dirt, slurry, solid waste, incinerator residue, sewage, sewage sludge, garbage, trash, chemical waste, biological nutrient, biological material, radioactive material, heat, wrecked or discarded equipment, rock, sand, or any industrial, municipal or agricultural waste. See 5 CCR 1002-61.2(76).

(20) Presentation of credentials – a government issued form of identification, if in person; or (ii) providing name, position and purpose of inspection if request to enter is made via telephone, email or other form of electronic communication. A Permittee's non-response to a request to enter upon presentation of credentials constitutes a denial to such request, and may result in violation of the Permit.

(21) Process Water - Any water which, during manufacturing or processing, comes into contact with or results from the production of any raw material, intermediate product, finished product, by product or waste product.

(22) Public Emergency Related Site - a project initiated in response to an unanticipated emergency (e.g., mud slides, earthquake, extreme flooding conditions, disruption in essential public services), for which the related work requires immediate authorization to avoid imminent endangerment to human health or the environment, or to reestablish essential public services.

(23) Qualified Stormwater Manager - An individual knowledgeable in the principles and practices of erosion and sediment control and pollution prevention, and with the skills to assess conditions at construction sites that could impact stormwater quality and to assess the effectiveness of stormwater controls implemented to meet the requirements of this permit.

(24) Qualifying Local Program - A municipal program for stormwater discharges associated with small construction activity that was formally approved by the division as a qualifying local program.

(25) Receiving Water - Any classified or unclassified surface water segment (including tributaries) in the State of Colorado into which stormwater associated with construction activities discharges. This definition includes all water courses, even if they are usually dry, such as borrow ditches, arroyos, and other unnamed waterways.

(26) Severe Property Damage - substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. See 40 CFR 122.41(m)(1)(ii).

(27) Significant Materials - Include, but not limited to, raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the permittee is required to report under section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA); fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with stormwater discharges.

(28) Small Construction Activity - The discharge of stormwater from construction activities that result in land disturbance of equal to, or greater than, one acre and less than five acres. Small construction activity also includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale, if the larger common plan ultimately disturbs equal to, or greater than, one acre and less than five acres.

(29) Spill - An unintentional release of solid or liquid material which may pollute state waters.

(30) State Waters - means any and all surface and subsurface waters which are contained in or flow in or through this state, but does not include waters in sewage systems, waters in treatment works of disposal systems, waters in potable water distribution systems, and all water withdrawn for use until use and treatment have been completed.

(31) Steep Slopes: where a local government, or industry technical manual (e.g., stormwater BMP manual) has defined what is to be considered a "steep slope", this permit's definition automatically adopts that definition. Where no such definition exists, steep slopes are automatically defined as those that are 3:1 or greater.

(32) Stormwater - Precipitation runoff, snow melt runoff, and surface runoff and drainage. See 5 CCR 1002-61.2(103).

(33) Total Maximum Daily Loads (TMDLs) -The sum of the individual wasteload allocations (WLA) for point sources and load allocations (LA) for nonpoint sources and natural background. For the purposes of this permit, a TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL includes WLAs, LAs, and must include a margin of safety (MOS), and account for seasonal variations. See section 303(d) of the CWA and 40 C.F.R. 130.2 and 130.7.

(34) Upset - an exceptional incident in which there is unintentional and temporary noncompliance with permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation in accordance with 40 CFR 122.41(n) and Regulation 61.2(114).

## F. MONITORING

The division may require sampling and testing, on a case-by-case basis. If the division requires sampling and testing, the division will send a notification to the permittee. Reporting procedures for any monitoring data collected will be included in the notification.

If monitoring is required, the following applies:

1. the thirty (30) day average must be determined by the arithmetic mean of all samples collected during a thirty (30) consecutive-day period; and

2. a grab sample, for monitoring requirements, is a single "dip and take" sample.

## G. Oil and Gas Construction

Stormwater discharges associated with construction activities directly related to oil and gas exploration, production, processing, and treatment operations or transmission facilities are regulated under the Colorado Discharge Permit System Regulations (5 CCR 1002-61), and require coverage under this permit in accordance with that regulation. However, references in this permit to specific authority under the CWA do not apply to stormwater discharges associated with these oil and gas related construction activities, to the extent that the references are limited by the federal Energy Policy Act of 2005.

## Part II: Standard Permit Conditions

### A. DUTY TO COMPLY

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Water Quality Control Act and is grounds for:

a. enforcement action;

b. permit termination, revocation and reissuance, or modification; or

c. denial of a permit renewal application.

### B. DUTY TO REAPPLY

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain authorization as required by Part I.A.3.k. of the permit.

### C. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

### D. DUTY TO MITIGATE

A permittee must take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

### E. PROPER OPERATION AND MAINTENANCE

A permittee must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by the permittee only when the operation is necessary to achieve compliance with the conditions of this permit. This requirement can be met by meeting the requirements for Part I.B., I.C., and I.D. above. See also 40 C.F.R. § 122.41(e).

### F. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for cause. The permittee request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition. Any request for modification, revocation, reissuance, or termination under this permit must comply with all terms and conditions of Regulation 61.8(8).

### G. PROPERTY RIGHTS

In accordance with 40 CFR 122.41(g) and 5 CCR 1002-61, 61.8(9):

1. The issuance of a permit does not convey any property or water rights in either real or personal property, or stream flows or any exclusive privilege.

2. The issuance of a permit does not authorize any injury to person or property or any invasion of personal rights, nor does it authorize the infringement of federal, state, or local laws or regulations.
3. Except for any toxic effluent standard or prohibition imposed under Section 307 of the Federal act or any standard for sewage sludge use or disposal under Section 405(d) of the Federal act, compliance with a permit during its term constitutes compliance, for purposes of enforcement, with Sections 301, 302, 306, 318, 403, and 405(a) and (b) of the Federal act. However, a permit may be modified, revoked and reissued, or terminated during its term for cause as set forth in Section 61.8(8) of the Colorado Discharge Permit System Regulations.

## H. DUTY TO PROVIDE INFORMATION

The permittee shall furnish to the division, within a reasonable time, any information which the division may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the division, upon request, copies of records required to be kept by this permit in accordance with 40 CFR 122.41(h) and/or Regulation 61.8(3)(q).

## I. INSPECTION AND ENTRY

The permittee shall allow the division and the authorized representative, upon the presentation of credentials as required by law, to allow for inspections to be conducted in accordance with 40 CFR 122.41(i), Regulation 61.8(3), and Regulation 61.8(4):

1. to enter upon the permittee's premises where a regulated facility or activity is located or in which any records are required to be kept under the terms and conditions of this permit;
2. at reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit;
3. at reasonable times, inspect any monitoring equipment or monitoring method required in the permit; and
4. to enter upon the permittee's premises in a reasonable manner and at a reasonable time to inspect or investigate, any actual, suspected, or potential source of water pollution, or any violation of the Colorado Water Quality Control Act. The investigation may include: sampling of any discharges, stormwater or process water, taking of photographs, interviewing site staff on alleged violations and other matters related to the permit, and assessing any and all facilities or areas within the site that may affect discharges, the permit, or an alleged violation.

The permittee shall provide access to the division or other authorized representatives upon presentation of proper credentials. A permittee's non-response to a request to enter upon presentation of credentials constitutes a denial of such request, and may result in a violation of the permit.

## J. MONITORING AND RECORDS

1. Samples and measurements taken for the purpose of monitoring must be representative of the volume and nature of the monitored activity.

2. The permittee must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date the permit expires or the date the permittee's authorization is terminated. This period may be extended by request of the division at any time.

3. Records of monitoring information must include:
   a. The date, exact place, and time of sampling or measurements;
   b. The individual(s) who performed the sampling or measurements;
   c. The date(s) analyses were performed
   d. The individual(s) who performed the analyses;
   e. The analytical techniques or methods used; and
   f. The results of such analyses.

4. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in the permit.

## K. SIGNATORY REQUIREMENTS

1. Authorization to Sign:

   All documents required to be submitted to the division by the permit must be signed in accordance with the following criteria:

   a. For a corporation: By a responsible corporate officer. For the purpose of this subsection, a responsible corporate officer means:

      i. a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or

      ii. the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

   b. For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

   c. For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this subsection, a principal executive officer of a federal agency includes

      i. (i) the chief executive officer of the agency, or

ii. (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency. (e.g., Regional Administrator of EPA)

2. Electronic Signatures

For persons signing applications for coverage under this permit electronically, in addition to meeting other applicable requirements stated above, such signatures must meet the same signature, authentication, and identity-proofing standards set forth at 40 CFR § 3.2000(b) for electronic reports (including robust second-factor authentication). Compliance with this requirement can be achieved by submitting the application using the Colorado Environmental Online Service (CEOS) system.

3. Change in Authorization to Sign

If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be submitted to the division, prior to the re-authorization, or together with any reports, information, or applications to be signed by an authorized representative.

## L. REPORTING REQUIREMENTS

1. Planned Changes

The permittee shall give advance notice to the division, in writing, of any planned physical alterations or additions to the permitted facility in accordance with 40 CFR 122.41(l) and Regulation 61.8(5)(a). Notice is required only when:

a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or

b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.41(a)(1).

2. Anticipated Non-Compliance

The permittee shall give advance notice to the division, in writing, of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements. The timing of notification requirements differs based on the type of non-compliance as described in subparagraphs 5, 6, 7, and 8 below.

3. Transfer of Ownership or Control

The permittee shall notify the division, in writing, ten (10) calendar days in advance of a proposed transfer of the permit. This permit is not transferable to any person except after notice is given to the division.

a. Where a facility wants to change the name of the permittee, the original permittee (the first owner or operators) must submit a Notice of Termination.

b. The new owner or operator must submit an application. See also signature requirements in Part II.K, above.

c. A permit may be automatically transferred to a new permittee if:

i. The current permittee notifies the Division in writing 30 calendar days in advance of the proposed transfer date; and

ii. The notice includes a written agreement between the existing and new permittee(s) containing a specific date for transfer of permit responsibility, coverage and liability between them; and

iii. The division does not notify the existing permittee and the proposed new permittee of its intent to modify, or revoke and reissue the permit.

iv. Fee requirements of the Colorado Discharge Permit System Regulations, Section 61.15, have been met.

4. Monitoring reports

Monitoring results must be reported at the intervals specified in this permit per the requirements of 40 CFR 122.41(l)(4).

5. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule in the permit, shall be submitted on the date listed in the compliance schedule section. The fourteen (14) calendar day provision in Regulation 61.8(4)(n)(i) has been incorporated into the due date.

6. Twenty-four hour reporting

In addition to the reports required elsewhere in this permit, the permittee shall report the following circumstances orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances, and shall mail to the division a written report containing the information requested within five (5) working days after becoming aware of the following circumstances:

a. Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident;

b. Circumstances leading to any unanticipated bypass which exceeds any effluent limitations in the permit;

c. Circumstances leading to any upset which causes an exceedance of any effluent limitation in the permit;

d. Daily maximum violations for any of the pollutants limited by Part I of this permit. This includes any toxic pollutant or hazardous substance or any pollutant specifically identified as the method to control any toxic pollutant or hazardous substance.

e. The division may waive the written report required under subparagraph 6 of this section if the oral report has been received within 24 hours.

7. Other non-compliance

A permittee must report all instances of noncompliance at the time monitoring reports are due. If no monitoring reports are required, these reports are due at least annually in accordance with Regulation 61.8(4)(p). The annual report must contain all instances of non-compliance required under either subparagraph 5 or subparagraph 6 of this subsection.

8. Other information

Where a permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to the Permitting Authority, it has a duty to promptly submit such facts or information.

## M. BYPASS

1. Bypass not exceeding limitations

The permittees may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Part II.M.2 of this permit. See 40 CFR 122.41(m)(2).

2. Notice of bypass

a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, the permittee must submit prior notice, if possible at least ten days before the date of the bypass. ee 40 CFR §122.41(m)(3)(i) and/or Regulation 61.9(5)(c).

b. Unanticipated bypass. The permittee must submit notice of an unanticipated bypass in accordance with Part II.L.6. See 40 CFR §122.41(m)(3)(ii) .

3. Prohibition of Bypass

Bypasses are prohibited and the division may take enforcement action against the permittee for bypass, unless:

i. the bypass is unavoidable to prevent loss of life, personal injury, or severe property damage;

ii. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

iii. proper notices were submitted to the division.

## N. UPSET

1. Effect of an upset

An upset constitutes an affirmative defense to an action brought for noncompliance with permit effluent limitations if the requirements of Part II.N.2. of this permit are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review in accordance with Regulation 61.8(3)(j).

2. Conditions necessary for demonstration of an Upset

A permittee who wishes to establish the affirmative defense of upset shall demonstrate through properly signed contemporaneous operating logs, or other relevant evidence that

a. an upset occurred and the permittee can identify the specific cause(s) of the upset;

b. the permitted facility was at the time being properly operated and maintained; and

c. the permittee submitted proper notice of the upset as required in Part II.L.6.(24-hour notice); and

d. the permittee complied with any remedial measure necessary to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. In addition to the demonstration required above, a permittee who wishes to establish the affirmative defense of upset for a violation of effluent limitations based upon water quality standards shall also demonstrate through monitoring, modeling or other methods that the relevant standards were achieved in the receiving water.

3. Burden of Proof

In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

## O. RETENTION OF RECORDS

1. Post-Expiration or Termination Retention

Copies of documentation required by this permit, including records of all data used to complete the application for permit coverage to be covered by this permit, must be

retained for at least three years from the date that permit coverage expires or is terminated. This period may be extended by request of EPA at any time.

2. On-site Retention

The permittee must retain an electronic version or hardcopy of the SWMP at the construction site from the date of the initiation of construction activities to the date of expiration or inactivation of permit coverage; unless another location, specified by the permittee, is approved by the division.

## P. REOPENER CLAUSE

1. Procedures for modification or revocation

Permit modification or revocation of this permit or coverage under this permit will be conducted according to Regulation 61.8(8).

2. Water quality protection

If there is evidence indicating that the stormwater discharges authorized by this permit cause, have the reasonable potential to cause or contribute to an excursion above any applicable water quality standard, the permittee may be required to obtain an individual permit, or the permit may be modified to include different limitations and/or requirements.

## Q. SEVERABILITY

The provisions of this permit are severable. If any provisions or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances and the application of the remainder of this permit shall not be affected.

## R. NOTIFICATION REQUIREMENTS

1. Notification to Parties

All notification requirements, excluding information submitted using the CEOS portal, shall be directed as follows:

a. Oral Notifications, during normal business hours shall be to:
Clean Water Compliance Section
Water Quality Control Division
Telephone: (303) 692-3500

b. Written notification shall be to:
Clean Water Compliance Section
Water Quality Control Division
Colorado Department of Public Health and Environment
WQCD-WQP-B2
4300 Cherry Creek Drive South
Denver, CO 80246-1530

## S. RESPONSIBILITIES

1. Reduction, Loss, or Failure of Treatment Facility

   The permittee has the duty to halt or reduce any activity if necessary to maintain compliance with the effluent limitations of the permit. It shall not be a defense for a permittee in an enforcement action that it would be necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

## T. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 (Oil and Hazardous Substance Liability) of the CWA.

## U. Emergency Powers

Nothing in this permit shall be construed to prevent or limit application of any emergency power of the division.

## V. Confidentiality

Any information relating to any secret process, method of manufacture or production, or sales or marketing data which has been declared confidential by the permittee, and which may be acquired, ascertained, or discovered, whether in any sampling investigation, emergency investigation, or otherwise, shall not be publicly disclosed by any member, officer, or employee of the Water Quality Control Commission or the division, but shall be kept confidential. Any person seeking to invoke the protection of of this section shall bear the burden of proving its applicability. This section shall never be interpreted as preventing full disclosure of effluent data.

## W. Fees

The permittee is required to submit payment of an annual fee as set forth in the 2016 amendments to the Water Quality Control Act. Section 25-8-502 (1.1) (b), and the Colorado Discharge Permit System Regulations 5 CCR 1002-61, Section 61.15 as amended. Failure to submit the required fee when due and payable is a violation of the permit and will result in enforcement action pursuant to Section 25-8-601 et. seq., C.R.S.1973 as amended.

## X. Duration of Permit

The duration of a permit shall be for a fixed term and shall not exceed five (5) years. If the permittee desires to continue to discharge, a permit renewal application shall be submitted at least ninety (90) calendar days before this permit expires. Filing of a timely and complete application shall cause the expired permit to continue in force to the effective date of the new permit. The permit's duration may be extended only through administrative extensions and not through interim modifications. If the permittee anticipates there will be no discharge after the expiration date of this permit, the division should be promptly notified so that it can terminate the permit in accordance with Part I.A.3.i.

## Y. Section 307 Toxics

If a toxic effluent standard or prohibition, including any applicable schedule of compliance specified, is established by regulation pursuant to Section 307 of the Federal Act for a toxic pollutant which is present in the permittee's discharge and such standard or prohibition is more stringent than any limitation upon such pollutant in the discharge permit, the division

shall institute proceedings to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition

# Low Risk Discharge Guidance
# Discharges of Uncontaminated Groundwater to Land

Originally Issued September 2009
Revised August 8, 2017

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## Scope and Purpose of Modification

This revised guidance document is effective August 4, 2017. In addition to organizational and editorial revisions, the following substantive modifications were made:

- Additional information was added regarding determining if the discharge is uncontaminated. Refer to the Criteria section.
- Removed the reference to solid waste permitting in the background and discussion portion of the document. Uncontaminated groundwater would typically not be regulated as a solid waste, and therefore the discussion was not likely to be applicable to discharges covered by this guidance. However, it remains the responsible parties' obligation to ensure compliance with other applicable laws and regulations, including solid waste requirements.
- The requirement that the discharge be returned to the same aquifer that it was drawn from was added. This is consistent with the intent of the original version, as identified by the examples of covered discharges provided: construction dewatering, subterranean or foundation dewatering, uncontaminated vault dewatering, and utility work.

## Background and Discussion

This discharge policy guidance has been developed in accordance with WQP-27, Low Risk Discharges Policy. This guidance is only applicable to discharges meeting the low risk discharge criteria and conditions identified below. **Refer to the Alternative Disposal Options section at the end of this document for additional information for discharges that do not meet the criteria and conditions of this guidance.**

The division has issued general permits for point source discharges of groundwater to land, as identified in the Alternative Disposal Options section. However, for the category of point source discharges that meet the criteria and conditions outlined in this document, the division has determined it is appropriate to manage the discharges through the development of guidance instead of through pursuing permit coverage. When the criteria and provisions of this guidance are met, the division will not actively pursue permitting or enforcement for discharges of groundwater to land, unless on a case-by-case basis, the division finds that a discharge has resulted in an adverse impact to the quality of any state waters receiving the discharge.

Discharges of uncontaminated groundwater to land that are typically associated with short term or intermittent

discharges are not expected to contain pollutants in concentrations that are toxic, or in concentrations that would cause or contribute to a violation of a water quality standard for ground water. A large number of these types of discharges occur state-wide every year, which requires a resource-intensive effort to permit without a resulting general benefit to environmental quality in the vast majority of situations.

Discharges of uncontaminated groundwater to land that may be covered under this guidance document when all the provisions in the document are adhered to may include, but are not limited to: construction dewatering, subterranean or foundation dewatering, uncontaminated vault dewatering, and utility work.

## Criteria, Conditions, and Control Measures

- **Definitions**
  - **Control Measures:** are any best management practice or other method used to prevent or reduce the discharge of pollutants to waters of the state.

- **Low Risk Discharge Criteria**

  This guidance is applicable to point source discharges that meet the following criteria and that meet the conditions listed in the next section. Refer to the Alternative Disposal Options section for guidance on addressing water not meeting these criteria.

  - The source of the discharge must solely be uncontaminated groundwater or uncontaminated groundwater combined with stormwater. Refer to the guidance in the Control Measure section below for information on identifying potentially contaminated groundwater.
  - To be considered uncontaminated, the source ground water must not contain pollutants in concentrations that exceed water quality standards for groundwater applicable to the receiving groundwater. For ground water for which standards have not already been assigned in Regulation 42, Site-Specific Water Quality Classifications and Standards for Ground Water (5 CCR 1002-42), pollutants shall not exceed the criteria set forth in Tables 1 through 4 of "The Basic Standards for Ground Water," in Regulation 41, The Basic Standards for Ground Water (5 CCR 1002-41). This guidance does not include consideration of criteria for groundwater based on existing ambient quality as of January 31, 1994, as set forth in Regulation No. 41.5.C.6.b.i(A). Because a site-specific evaluation and determination is necessary for application of such criteria, the division has determined that consideration of this allowance is not appropriate under this guidance. The source groundwater must be from the same aquifer that the water will be returned to. Specifically, this guidance is not applicable to discharges from deep wells that draw water from confined aquifers which will often have substantially different water quality compositions than the shallower unconfined aquifers to which the water will be discharged.
  - The discharge must be to land. Point source discharges to surface waters of the state, storm sewers, or other drainage conveyance systems are not covered by this guidance.

- **Conditions**

  The following conditions must be met by anyone discharging wastewater in accordance with this guidance:

  - **Prohibition of pollutants in the discharge:**
    - No chemicals may be added.
    - If the discharge is from vaults or similar structures, the discharge cannot be contaminated by process materials used, stored, or conveyed in the structures, or by introduced surface water runoff from outside environments that may contain oil, grease, and corrosives.
    - A visible sheen must not be evident in the source water or discharge.
  - **Exclusion of Process Discharges:**
    - The groundwater shall not be used in any additional processes. Processes include, but are not limited to, any type of washing, heat exchange, or manufacturing.
  - **Controlling the discharge:**
    - The groundwater discharge cannot leave the operational control of the entity administering the land application. The owner of the property where the discharge is occurring must have prior knowledge and grant permission for the land application.
    - Land application must be conducted at a rate and location that does not allow for any runoff into state waters or other drainage conveyance systems, including but not limited to streets, curb and

gutter, inlets, borrow ditches, open channels etc. If the land application is to agricultural land, it must not reach or have the potential to reach an agricultural ditch. Discharges to drainage conveyance systems as described above are a discharge to surface water that require a discharge permit and are not covered under this guidance document.

- Land application must be conducted at a rate that does not allow for any ponding of the groundwater on the surface, unless the ponding is a result of implementing control measures that are designed to reduce flow velocity. If the control measures used result in ponding, the land application must be done in an area with a constructed containment, such as an excavation or bermed area with no designed outfall. The constructed containment shall prevent the discharge of the ponding water offsite as runoff.

❖ **Compliance with construction stormwater discharge permits:** If the discharge is located at a facility covered by a CDPS General Permit for Stormwater Discharge Associated with Construction Activities, the requirements in that permit associated with the discharge of groundwater must be complied with, including identification in the Stormwater Management Plan.

❖ **Controlling erosion:** The discharge shall not cause erosion of a land surface that could cause pollution of the receiving water. Signs of visible erosion that have the potential to cause pollution without downstream controls measures implemented include the formation of rills or gullies on the land surface. Energy dissipation devices designed to protect downstream areas from erosion by reducing velocity of flow (such as hose attachments and erosion controls) may be necessary to prevent erosion.

❖ **Controlling pollutant potential of deposited sediment:** Control measures shall be implemented to prevent any sediment deposited during land application from being transported by stormwater runoff to surface waters or other conveyances.

❖ **Additional Requirements and Property Rights:**

- All discharges must comply with the lawful requirements of federal agencies, municipalities, counties, drainage districts, ditch owners, and other local agencies regarding any discharges to storm drain systems, conveyances, ditches or other water courses under their jurisdiction.
- The guidance included in this document in no way reduces the existing authority of the owner of a storm sewer, ditch owner, or other local agency, from prohibiting or placing additional conditions on the discharge.
- The discharge shall not result in flooding of neighboring property, streets, gutters or storm sewers. The discharge must be diverted from building foundations or other areas that may be damaged from ground settling or swelling.

➢ **Implementation of Control Measures**

Control measures should be implemented as necessary to meet the conditions above, by anyone discharging in accordance with this guidance. The following control measures have been developed by the division to help ensure that the discharge will not negatively affect water quality. Refer to the Alternative Disposal Options section for guidance where these control measures cannot be implemented.

❖ **Identifying potentially contaminated groundwater:** It the groundwater is located within 1 mile of a landfill, abandoned landfill, mine or mine tailing area, a Leaking Underground Storage Tank (LUST), Brownfield site, or other area of contamination, there is an increased likelihood that groundwater contamination exists. In those cases additional work is appropriate to determine if your dewatering area is in an area of contamination. The following is a list of contamination and plume resources and is helpful when determining if your dewatering area is in an area of contamination, however the list is not all inclusive and in some cases site-specific characterization of groundwater may be necessary.

**CDPHE Environmental Cleanup Web Page** (refer to the resources under "sites and facilities"):
https://www.colorado.gov/pacific/cdphe/categories/services-and-information/environment/environmental-cleanup#sites

**EPA Cleanups in My Community Maps and Lists:**
https://www.epa.gov/cleanups/cleanups-my-community

- All control measures used to meet the provisions of this guidance document must be selected, installed, implemented and maintained according to good engineering, hydrologic and pollution control practices. These control measures must be adequately designed to provide control for all potential pollutant sources associated with the discharge of uncontaminated groundwater to land.

- The discharge should be routed in such a way that it will not contact petroleum products/waste, a visible sheen must not be evident in the discharge.

- To minimize potential for creating stormwater pollution sources, control measures (such as a filter bag or similar filtration device) should be used to remove sediment/solids prior to land application.

## Alternative Disposal Options

Water that does not meet the criteria of this guidance or that cannot be discharged in a manner that meets the conditions of this guidance must be either authorized by a Colorado Discharge Permit System (CDPS) discharge permit issued by the division or disposed of through an alternative means.

The Water Quality Control Division has general permits available for discharges to surface water and/or land associated with construction dewatering, subterranean structure/foundation dewatering, and the remediation of groundwater. Obtaining coverage one of these permits will likely be the most efficient solution for discharges that do not meet the criteria and conditions of this guidance.

For discharges associated with construction projects, guidance on determining the appropriate permit and applying in included in the Application Guidance Document for these general permits, available on the division's construction sector permitting page: https://www.colorado.gov/pacific/cdphe/wq-construction-general-permits

Discharges from subterranean structures (basement, foundation, footer drains, etc.) are covered by the Subterranean Dewatering or Well Development general permit. The application and other information for this general permit can be found on the commerce and industry sector permitting page: https://www.colorado.gov/pacific/cdphe/clean-water-commerce-and-industry-permitting

For more information, contact the Water Quality Control Division's Permitting Section or Clean Water Compliance Unit, at (303) 692-3517.

# EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP)
# EL PASO COUNTY APPLICATION AND PERMIT

**EPC Project Number:**

***APPLICANT INFORMATION*** ***PERMIT NUMBER*** _____

| **Owner Information** | |
|---|---|
| Property Owner | |
| Applicant Name (Permit Holder) | |
| Company/Agency | |
| Position of Applicant | |
| Address (physical address, not PO Box) | |
| City | |
| State | |
| Zip Code | |
| Mailing address, if different from above | |
| Telephone | |
| FAX number | |
| Email Address | |
| Cellular Phone number | |
| **Contractor/Operator Information** | |
| Name (person of responsibility) | |
| Company | |
| Address (physical address, not PO Box) | |
| City | |
| State | |
| Zip Code | |
| Mailing address, if different from above | |
| Telephone | |
| FAX number | |
| Email Address | |
| Cellular Phone number | |
| Erosion Control Supervisor (ECS)* | |
| ECS Phone number* | |
| ECS Cellular Phone number* | |

*Required for all applicants. May be provided at later date pending securing a contract when applicable.

***PROJECT INFORMATION***

| **Project Information** | |
|---|---|
| Project Name | Space Village Filing No. 4 |
| Legal Description | Lots 1 and 2, Block 1, Space Village Filing No. 4 |
| Address (or nearest major cross streets) | Space Village Avenue & Peterson Boulevard |
| Acreage (total and disturbed) | Total: 23.0 acres<br>Disturbed: 23.0 acres |
| Schedule | Start of Construction:<br>Completion of Construction:<br>Final Stabilization: |
| Project Purpose | Construction of an outdoor storage facility |
| Description of Project | There are no proposed structures. Paving (concrete, asphalt, etc.) for access accounts for 0.1 ac. Paving (gravel, asphalt millings, recycled conc., etc.) accounts for 16.6 ac. The remaining 6.3 ac. includes landscaping. |
| Tax Schedule Number | |

FOR OFFICE USE ONLY

The following signature from the ECM Administrator signifies the approval of this ESQCP. All work shall be performed in accordance with the permit, the El Paso County Engineering Criteria Manual (ECM) Standards, City of Colorado Springs Drainage Criteria Manual, Volume 2 (DCM2) as adopted by El Paso County Addendum, approved plans, and any attached conditions. The approved plans are an enforceable part of the ESQCP. Construction activity, except for the installation of initial construction BMPs, is not permitted until issuance of a Construction Permit and Notice to Proceed.

Signature of ECM Administrator: _____ Date _____

## 1.1 REQUIRED SUBMISSIONS

In addition to this completed and signed application, the following items must be submitted to obtain an ESQCP:

- Permit fees;
- Stormwater Management Plan (SWMP) meeting the requirements of DCM2 and ECM either as part of the plan set or as a separate document;
- Operation and Maintenance Plan for any proposed permanent stormwater control measures; and
- Signed Private Detention Basin/Stormwater Quality Best Management Practice Maintenance Agreement and Easement, if any permanent stormwater control measures are to be constructed.

## 1.2 RESPONSIBILITY FOR DAMAGE

The County and its officers and employees, including but not limited to the ECM Administrator, shall not be answerable or accountable in any manner for damage to property or for injury to or death of any person, including but not limited to a permit holder, persons employed by the permit holder, or persons acting in behalf of the permit holder, from any cause. The permit holder shall be responsible for any liability imposed by law and for damage to property or injuries to or death of any person, including but not limited to the permit holder, persons employed by the permit holder, persons acting in behalf of the permit holder, arising out of work or other activity permitted and done under a permit, or arising out of the failure to perform the obligations under any permit with respect to maintenance or any other obligations, or resulting from defects or obstructions, or from any cause whatsoever during the progress of the work or other activity, or at any subsequent time work or other activity is being performed under the obligations provided by and contemplated by the permit.

The permit holder shall indemnify, save, and hold harmless the County and its officers and employees, including but not limited to the BOCC and ECM Administrator, from all claims, suits or actions of every name, kind and description brought for or on account of damage to property or injuries to or death of any person, including but not limited to the permit holder, persons employed by the permit holder, persons acting in behalf of the permit holder and the public, resulting from the performance of work or other activity under the permit, or arising out of the failure to perform obligations under any permit with respect to maintenance or any other obligations, or resulting from defects or obstructions, or from any cause whatsoever during the progress of the work or other activity, or at any subsequent time work or other activity is being performed under the obligations provided by and contemplated by the permit, except as otherwise provided by state law. The permit holder waives any and all rights to any type of expressed or implied indemnity against the County, its officers or employees. It is the intent of the parties that the permit holder will indemnify, save, and hold harmless the County, its officers and employees from any and all claims, suits or actions as set forth above regardless of the existence or degree of fault of or negligence, whether active or passive, primary or secondary, on the part of the County, the permit holder, persons employed by the permit holder, or persons acting in behalf of the permit holder

## 1.3 APPLICATION CERTIFICATION

We, as the Applicants or the representative of the Applicants, hereby certify that this application is correct and complete as per the requirements presented in this application, the El Paso County Engineering Criteria Manual, and Drainage Criteria Manual, Volume 2 and El Paso County Addendum.

We, as the Applicants or the representatives of the Applicants, have read and will comply with all of the requirements of the specified Stormwater Management Plan and any other documents specifying stormwater best management practices to be used on the site, including permit conditions that may be required by the ECM Administrator. We understand that the stormwater control measures are to be maintained on the site and revised as necessary to protect stormwater quality as the project progresses. We further understand that a Construction Permit must be obtained and all necessary stormwater quality control measures are to be installed in accordance with the SWMP, the El Paso County Engineering Criteria Manual, Drainage Criteria Manual, Volume 2 and El Paso County Addendum before land disturbance begins and that failure to comply will result in a Stop Work Order and may result in other penalties as allowed by law. We further understand and agree to indemnify, save, and hold harmless the County and its officers and employees, including but not limited to the BOCC and ECM Administrator, from all claims, suits or actions of every name, kind and description as outlined in Section 1.2 Responsibility for Damage

_____ Date:_____

Signature of Owner or Representative

_____

Print Name of Owner or Representative

_____ Date:_____

Signature of Operator or Representative

_____

Print Name of Operator or Representative

Permit Fee $_____

Surcharge $_____

Financial Surety $_____ Type of Surety _____

Total $_____

# EL PASO COUNTY

| |
|---|
| DATE/TIME: |
| INSPECTOR: |
| TYPE OF INSPECTION: Self-Monitoring_____<br>Initial _____ Compliance_____ Follow-Up_____<br>Reconnaissance_____ Complaint_____ Final____ |

| | |
|---|---|
| SITE: | DATE OF PERMIT: |
| ADDRESS: | |
| CONTRACTOR:<br>CONTACT:<br>PHONE: | OWNER/OWNER'S REPRESENTATIVE:<br>CONTACT:<br>PHONE: |
| STAGE OF CONSTRUCTION: Initial BMP Installation/Prior to Construction_____ Clearing & Grubbing_____<br>Rough Grading_____ Finish Grading_____ Utility Construction_____ Building Construction_____<br>Final Stabilization_____ | |

| **OVERALL SITE INSPECTION** | **YES/NO/N.A.** | **REMARKS/ACTIONS** |
|---|---|---|
| Is there any evidence of sediment leaving the construction site? If so, note areas. | | |
| Have any adverse impacts such as flooding, structural damage, erosion, spillage, or accumulation of sediment, debris or litter occurred on or within public or private property, wetlands or surface waters –to include intermittent drainageways and the City's stormwater system (storm sewers, gutters, ditches, etc.)? | | |
| Are the BMPs properly installed and maintained? | | |
| Have the BMPs been placed as shown on approved plans? | | |
| Are the BMPs functioning as intended? | | |
| Is work being done according to approved plans and any phased construction schedule? | | |
| Is the construction schedule on track? | | |
| Are drainage channels and outlets adequately stabilized? | | |
| Is there any evidence of discharges or spills of fuels, lubricants, chemicals, etc.? | | |

| BMP MAINTENANCE CHECKLIST | YES/NO/N.A. | REMARKS/ACTIONS NECESSARY |
|---|---|---|
| CHECK DAM<br>Has accumulated sediment and debris been removed per maintenance requirements? | | |
| EROSION CONTROL BLANKET<br>Is fabric damaged, loose or in need of repairs? | | |
| INLET PROTECTION<br>Is the inlet protection damaged, ineffective or in need of repairs?<br>Has sediment been removed per maintenance requirements? | | |
| MULCHING<br>Distributed uniformly on all disturbed areas?<br>Is the application rate adequate?<br>Any evidence of mulch being blown or washed away?<br>Has the mulched area been seeded, if necessary? | | |
| SEDIMENT BASIN<br>Is the sediment basin properly constructed and operational?<br>Has sediment and debris been cleaned out of the basin? | | |
| SILT FENCE<br>Is the fence damaged, collapsed, unentrenched or ineffective?<br>Has sediment been removed per maintenance requirements?<br>Is the silt fence properly located? | | |
| SLOPE DRAIN<br>Is water bypassing or undercutting the inlet or pipe?<br>Is erosion occurring at the outlet of the pipe? | | |
| STRAW BALE BARRIER<br>Are the straw bales damaged, ineffective or unentrenched?<br>Has sediment been removed per maintenance requirements?<br>Are the bales installed and positioned correctly? | | |

| BMP MAINTENANCE CHECKLIST | YES/NO/N.A. | REMARKS/ACTIONS NECESSARY |
|---|---|---|
| SURFACE ROUGHENING<br>Is the roughening consistent/uniform on slopes??<br>Any evidence of erosion? | | |
| TEMPORARY SEEDING<br>Are the seedbeds protected by mulch?<br>Has any erosion occurred in the seeded area?<br>Any evidence of vehicle tracking on seeded areas? | | |
| TEMPORARY SWALES<br>Has any sediment or debris been deposited within the swales?<br>Have the slopes of the swale eroded or has damage occurred to the lining?<br>Are the swales properly located? | | |
| VEHICLE TRACKING<br>Is gravel surface clogged with mud or sediment?<br>Is the gravel surface sinking into the ground?<br>Has sediment been tracked onto any roads and has it been cleaned up?<br>Is inlet protection placed around curb inlets near construction entrance? | | |
| OTHER | | |

| FINAL INSPECTION CHECKLIST | YES/NO/N.A. | REMARKS/ACTIONS NECESSARY |
|---|---|---|
| Has all grading been completed in compliance with the approved Plan, and all stabilization completed, including vegetation, retaining walls or other approved measures? | | |
| Has final stabilization been achieved – uniform vegetative cover with a density of at least 70 percent of pre-disturbance levels, and cover capable of adequately controlling soil erosion; or permanent, physical erosion methods? | | |
| Have all temporary measures been removed? | | |
| Have all stockpiles, construction materials and construction equipment been removed? | | |
| Are all paved surfaces clean (on-site and off-site)? | | |
| Has sediment and debris been removed from drainage facilities (on-site and off-site) and other off-site property, including proper restoration of any damaged property? | | |
| Have all permanent stormwater quality BMPs been installed and completed? | | |

| ADDITIONAL COMMENTS: |
|---|
| |

The items noted as needing action must be remedied no later than _____. The contractor shall notify the inspector when all the items noted above have been addressed.

By signing this inspection form, the owner/owner's representative and the contractor acknowledge that they have received a copy of the inspection report and are aware it is their responsibility to take corrective actions by the date noted above. Failure to sign does not relieve the contractor and owner/owner's representative of their responsibility to take the necessary corrective action and of their liability for any damages that have occurred or may occur.

| | |
|---|---|
| INSPECTOR'S SIGNATURE: | DATE: |
| OWNER/OWNER'S REPRESENTATIVE SIGNATURE: | DATE: |
| CONTRACTOR'S SIGNATURE: | DATE: |

# APPENDIX D

- Example Logs and Inspection Forms

# CONSTRUCTION STORMWATER SITE INSPECTION REPORT

| | | | |
|---|---|---|---|
| Facility Name | | Permittee | |
| Date of Inspection | | Weather Conditions | |
| Permit Certification # | | Disturbed Acreage | |
| Phase of Construction | | Inspector Title | |
| Inspector Name | | | |

| | YES | NO |
|---|---|---|
| Is the above inspector a qualified stormwater manager? (permittee is responsible for ensuring that the inspector is a qualified stormwater manager) | ☐ | ☐ |

| **INSPECTION FREQUENCY** | |
|---|---|
| Check the box that describes the minimum inspection frequency utilized when conducting each inspection | |
| At least one inspection every 7 calendar days | ☐ |
| At least one inspection every 14 calendar days, with post-storm event inspections conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosions | ☐ |
| • This is this a post-storm event inspection. Event Date: _____ | ☐ |
| Reduced inspection frequency - Include site conditions that warrant reduced inspection frequency | ☐ |
| • Post-storm inspections at temporarily idle sites | ☐ |
| • Inspections at completed sites/area | ☐ |
| • Winter conditions exclusion | ☐ |

| | YES | NO |
|---|---|---|
| Have there been any deviations from the minimum inspection schedule? If yes, describe below. | ☐ | ☐ |
| | | |

| **INSPECTION REQUIREMENTS*** |
|---|
| i. Visually verify all implemented control measures are in effective operational condition and are working as designed in the specifications |
| ii. Determine if there are new potential sources of pollutants |
| iii. Assess the adequacy of control measures at the site to identify areas requiring new or modified control measures to minimize pollutant discharges |
| iv. Identify all areas of non-compliance with the permit requirements, and if necessary, implement corrective action |
| *Use the attached **Control Measures Requiring Routine Maintenance** and **Inadequate Control Measures Requiring Corrective Action** forms to document results of this assessment that trigger either maintenance or corrective actions |

**AREAS TO BE INSPECTED**

Is there evidence of, or the potential for, pollutants leaving the construction site boundaries, entering the stormwater drainage system or discharging to state waters at the following locations?

| | NO | YES | If "YES" describe discharge or potential for discharge below. Document related maintenance, inadequate control measures and corrective actions **Inadequate Control Measures Requiring Corrective Action** form |
|---|---|---|---|
| Construction site perimeter | ☐ | ☐ | |
| All disturbed areas | ☐ | ☐ | |
| Designated haul routes | ☐ | ☐ | |
| Material and waste storage areas exposed to precipitation | ☐ | ☐ | |
| Locations where stormwater has the potential to discharge offsite | ☐ | ☐ | |
| Locations where vehicles exit the site | ☐ | ☐ | |
| Other: _____ | ☐ | ☐ | |

**CONTROL MEASURES REQUIRING ROUTINE MAINTENANCE**

Definition: Any control measure that is still operating in accordance with its design and the requirements of the permit, but requires maintenance to prevent a breach of the control measure. These items are not subject to the corrective action requirements as specified in Part I.B.1.c of the permit.

| Are there control measures requiring maintenance? | NO | YES | |
|---|---|---|---|
| | ☐ | ☐ | If "YES" document below |

| Date Observed | Location | Control Measure | Maintenance Required | Date Completed |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

**INADEQUATE CONTROL MEASURES REQUIRING CORRECTIVE ACTION**

Definition: Any control measure that is not designed or implemented in accordance with the requirements of the permit and/or any control measure that is not implemented to operate in accordance with its design. This includes control measures that have not been implemented for pollutant sources. If it is infeasible to install or repair the control measure immediately after discovering the deficiency the reason must be documented and a schedule included to return the control measure to effective operating condition as possible.

| | NO | YES | |
|---|---|---|---|
| Are there inadequate control measures requiring corrective action? | ☐ | ☐ | If "YES" document below |

| | NO | YES | |
|---|---|---|---|
| Are there additional control measures needed that were not in place at the time of inspection? | ☐ | ☐ | If "YES" document below |

| Date Discovered | Location | Description of Inadequate Control Measure | Description of Corrective Action | Was deficiency corrected when discovered? YES/NO if "NO" provide reason and schedule to correct | Date Corrected |
|---|---|---|---|---|---|
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**REPORTING REQUIREMENTS**

The permittee shall report the following circumstances orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances, and shall mail to the division a written report containing the information requested within five (5) working days after becoming aware of the following circumstances. The division may waive the written report required if the oral report has been received within 24 hours.

**All Noncompliance Requiring 24-Hour Notification per Part II.L.6 of the Permit**

**a. Endangerment to Health or the Environment**

Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident (See Part II.L.6.a of the Permit)

*This category would primarily result from the discharge of pollutants in violation of the permit*

**b. Numeric Effluent Limit Violations**

- o Circumstances leading to any unanticipated bypass which exceeds any effluent limitations (See Part II.L.6.b of the Permit)
- o Circumstances leading to any upset which causes an exceedance of any effluent limitation (See Part II.L.6.c of the Permit)
- o Daily maximum violations (See Part II.L.6.d of the Permit)

*Numeric effluent limits are very uncommon in certifications under the COR400000 general permit. This category of noncompliance only applies if numeric effluent limits are included in a permit certification.*

| Has there been an incident of noncompliance requiring 24-hour notification? | NO | YES | |
|---|---|---|---|
| | ☐ | ☐ | If "YES" document below |

| Date and Time of Incident | Location | Description of Noncompliance | Description of Corrective Action | Date and Time of 24 Hour Oral Notification | Date of 5 Day Written Notification * |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |

*Attach copy of 5 day written notification to report. Indicate if written notification was waived, including the name of the division personnel who granted waiver.

After adequate corrective action(s) and maintenance have been taken, or where a report does not identify any incidents requiring corrective action or maintenance, the individual(s) designated as the Qualified Stormwater Manager, shall sign and certify the below statement:

"I verify that, to the best of my knowledge and belief, all corrective action and maintenance items identified during the inspection are complete, and the site is currently in compliance with the permit."

| | |
|---|---|
| Name of Qualified Stormwater Manager | Title of Qualified Stormwater Manager |
| Signature of Qualified Stormwater Manager | Date |

Notes/Comments

# APPENDIX E

- Site Maps (Grading and Erosion Control Plans)
- Landscape Plan (Final Stabilization Plan)

# SPACE VILLAGE FILING NO. 4

## A PORTION OF THE NW 1/4 OF SEC. 17, T14S, R65W, OF THE 6th P.M., EL PASO COUNTY, COLORADO

## GRADING & EROSION CONTROL PLAN

## EL PASO COUNTY STANDARD NOTES

1. STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS. ALL WORK AND EARTH DISTURBANCE SHALL BE DONE IN A MANNER THAT MINIMIZES POLLUTION OF ANY ON-SITE OR OFF-SITE WATERS, INCLUDING WETLANDS.

2. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.

3. A SEPARATE STORMWATER MANAGEMENT PLAN (SWMP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. MANAGEMENT OF THE SWMP DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE DESIGNATED QUALIFIED STORMWATER MANAGER OR CERTIFIED EROSION CONTROL INSPECTOR. THE SWMP SHALL BE LOCATED ON-SITE AT ALL TIMES DURING AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.

4. ONCE THE ESQCP IS APPROVED AND A "NOTICE TO PROCEED" HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL MEASURES AS INDICATED ON THE APPROVED GEC. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE APPLICANT TO COORDINATE THE MEETING TIME AND PLACE WITH COUNTY STAFF.

5. CONTROL MEASURES MUST BE INSTALLED PRIOR TO COMMENCEMENT OF ACTIVITIES THAT COULD CONTRIBUTE POLLUTANTS TO STORMWATER. CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, AND DISTURBED LAND AREAS SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF THE DISTURBANCE.

6. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE MAINTAINED AND REMAIN IN EFFECTIVE OPERATING CONDITION UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND FINAL STABILIZATION IS ESTABLISHED. ALL PERSONS ENGAGED IN LAND DISTURBANCE ACTIVITIES SHALL ASSESS THE ADEQUACY OF CONTROL MEASURES AT THE SITE AND IDENTIFY IF CHANGES TO THOSE CONTROL MEASURES ARE NEEDED TO ENSURE THE CONTINUED EFFECTIVE PERFORMANCE OF THE CONTROL MEASURES. ALL CHANGES TO TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES MUST BE INCORPORATED INTO THE STORMWATER MANAGEMENT PLAN.

7. TEMPORARY STABILIZATION SHALL BE IMPLEMENTED ON DISTURBED AREAS AND STOCKPILES WHERE GROUND DISTURBING CONSTRUCTION ACTIVITY HAS PERMANENTLY CEASED OR TEMPORARILY CEASED FOR LONGER THAN 14 DAYS.

8. FINAL STABILIZATION MUST BE IMPLEMENTED AT ALL APPLICABLE CONSTRUCTION SITES. FINAL STABILIZATION IS ACHIEVED WHEN ALL GROUND DISTURBING ACTIVITIES ARE COMPLETE AND ALL DISTURBED AREAS EITHER HAVE A UNIFORM VEGETATIVE COVER WITH INDIVIDUAL PLANT DENSITY OF 70 PERCENT OF PRE-DISTURBANCE LEVELS ESTABLISHED OR EQUIVALENT PERMANENT ALTERNATIVE STABILIZATION METHOD IS IMPLEMENTED. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED UPON FINAL STABILIZATION AND BEFORE PERMIT CLOSURE.

9. ALL PERMANENT STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AS DESIGNED IN THE APPROVED PLANS. ANY PROPOSED CHANGES THAT EFFECT THE DESIGN OR FUNCTION OF PERMANENT STORMWATER MANAGEMENT STRUCTURES MUST BE APPROVED BY THE ECM ADMINISTRATOR PRIOR TO IMPLEMENTATION.

10. EARTH DISTURBANCES SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY MINIMIZE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION. ALL DISTURBANCES SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHORTEST PRACTICAL PERIOD OF TIME. PRE-EXISTING VEGETATION SHALL BE PROTECTED AND MAINTAINED WITHIN 50 HORIZONTAL FEET OF WATERS OF THE STATE UNLESS SHOWN TO BE INFEASIBLE AND SPECIFICALLY REQUESTED AND APPROVED.

11. COMPACTION OF SOIL MUST BE PREVENTED IN AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES OR WHERE FINAL STABILIZATION WILL BE ACHIEVED BY VEGETATIVE COVER. AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES SHALL ALSO BE PROTECTED FROM SEDIMENTATION DURING CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED. IF COMPACTION PREVENTION IS NOT FEASIBLE DUE TO SITE CONSTRAINTS, ALL AREAS DESIGNATED FOR INFILTRATION AND VEGETATIVE CONTROL MEASURES MUST BE LOOSENED PRIOR TO INSTALLATION OF THE CONTROL MEASURE(S).

12. ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE A STABILIZED CONVEYANCE DESIGNED TO MINIMIZE EROSION AND THE DISCHARGE OF SEDIMENT OFF-SITE.

13. CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO ENTER STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES. CONCRETE WASHOUTS SHALL NOT BE LOCATED IN AN AREA WHERE SHALLOW GROUNDWATER MAY BE PRESENT, OR WITHIN 50 FEET OF A SURFACE WATER BODY, CREEK, OR STREAM.

14. DURING DEWATERING OPERATIONS, UNCONTAMINATED GROUNDWATER MAY BE DISCHARGED ON-SITE, BUT SHALL NOT LEAVE THE SITE IN THE FORM OF SURFACE RUNOFF UNLESS AN APPROVED STATE DEWATERING PERMIT IS IN PLACE.

15. EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING SHALL BE USED ON SLOPES STEEPER THAN 3:1.

16. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL WASTES FROM THE CONSTRUCTION SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REGULATORY REQUIREMENTS. NO CONSTRUCTION DEBRIS, TREE SLASH, BUILDING MATERIAL WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.

17. WASTE MATERIALS SHALL NOT BE TEMPORARILY PLACED OR STORED IN THE STREET, ALLEY, OR OTHER PUBLIC WAY, UNLESS IN ACCORDANCE WITH AN APPROVED TRAFFIC CONTROL PLAN. CONTROL MEASURES MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.

18. TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.

19. THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, SOIL AND SAND THAT MAY ACCUMULATE IN ROADS, STORM DRAINS AND OTHER DRAINAGE CONVEYANCE SYSTEMS AND STORMWATER APPURTENANCES AS A RESULT OF SITE DEVELOPMENT.

20. THE QUANTITY OF MATERIALS STORED ON THE PROJECT SITE SHALL BE LIMITED, AS MUCH AS PRACTICAL, TO THAT QUANTITY REQUIRED TO PERFORM THE WORK IN AN ORDERLY SEQUENCE. ALL MATERIALS STORED ON-SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER, IN THEIR ORIGINAL CONTAINERS, WITH ORIGINAL MANUFACTURER'S LABELS.

21. NO CHEMICAL(S) HAVING THE POTENTIAL TO BE RELEASED IN STORMWATER ARE TO BE STORED OR USED ON-SITE UNLESS PERMISSION FOR THE USE OF SUCH CHEMICALS IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING APPROVAL FOR THE USE OF SUCH CHEMICAL(S), SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.

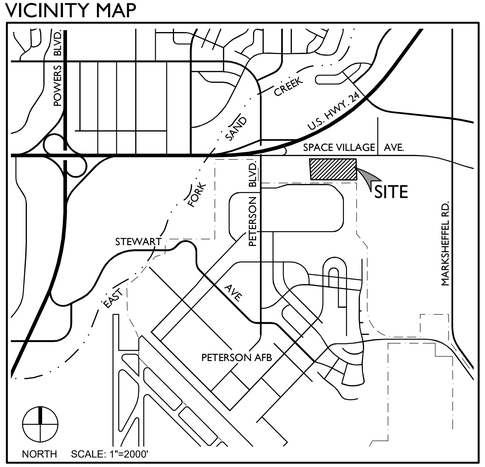
## CAUTION - NOTICE TO CONTRACTOR

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING IMPROVEMENTS AND UTILITIES AND SHALL REPAIR ANY DAMAGE AT HIS EXPENSE.

Know what's **below.** **Call** before you dig.

## VICINITY MAP




## SHEET INDEX


| | | |
|---|---|---|
| 1 | C900 | GRADING & EROSION CONTROL COVER SHEET (SWMP - SITE MAP) |
| 2 | C901 | GRADING & EROSION CONTROL NOTES (SWMP SITE MAP) |
| 3 | C905 | GRADING & EROSION CONTROL PLAN (SWMP - SITE MAP) |
| 4 | C910 | GRADING & EROSION CONTROL DETAILS (SWMP - SITE MAP) |
| 5 | C911 | GRADING & EROSION CONTROL DETAILS (SWMP - SITE MAP) |
| 6 | C912 | GRADING & EROSION CONTROL DETAILS (SWMP - SITE MAP) |
| 7 | C913 | GRADING & EROSION CONTROL DETAILS (SWMP - SITE MAP) |


## FLOODPLAIN

ZONE X, "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN." AS SHOWN ON FEMA FIRM MAP NO. 08041C0754G, EFFECTIVE DATE, DECEMBER 7, 2018.

## EL PASO COUNTY STANDARD NOTES (CONTINUED)

22. BULK STORAGE OF ALLOWED PETROLEUM PRODUCTS OR OTHER ALLOWED LIQUID CHEMICALS IN EXCESS OF 55 GALLONS SHALL REQUIRE ADEQUATE SECONDARY CONTAINMENT PROTECTION TO CONTAIN ALL SPILLS ON-SITE AND TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR OTHER FACILITIES.

23. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLWO IN THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.

24. OWNER/DEVELOPER AND THEIR AGENTS SHALL COMPLY WITH THE "COLORADO WATER QUALITY CONTROL ACT" (TITLE 25, ARTICLE 8, CRS), AND THE "CLEAN WATER ACT" (33 USC 1344), IN ADDITION TO THE REQUIREMENTS OF THE LAND DEVELOPMENT CODE, DCM VOLUME II AND THE ECM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (1041, NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND OTHER LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, LOCAL, OR COUNTY AGENCIES, THE MOST RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.

25. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT APPROVED CONSTRUCTION ACCESS POINTS.

26. PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.

27. A WATER SOURCE SHALL BE AVAILABLE ON-SITE DURING EARTHWORK OPERATIONS AND SHALL BE UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.

28. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY XXXXX XXXXX XXXXX, DATE XXX; AND SHALL BE CONSIDERED A PART OF THESE PLANS.

29. AT LEAST TEN (10) DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB ONE (1) ACRE OR MORE, THE OWNER OR OPERATOR OF CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLID HEALTH AND ENVIRONMENT, WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THE GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS CONTACT:

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
WATER QUALITY CONTROL DIVISION
WQCD - PERMITS
4300 CHERRY CREEK DRIVE SOUTH
DENVER, CO 80246-15330
ATTN: PERMITS UNIT

## ENGINEER'S STATEMENT

THIS GRADING AND EROSION CONTROL PLAN WAS PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. SAID PLAN HAS BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR GRADING AND EROSION CONTROL PLANS AS APPLICABLE. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS, OR OMISSIONS ON MY PART IN PREPARING THIS PLAN FOR AND ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC.

JAY M. NEWELL, PE
CO PE #35219
FOR AND ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC

## OWNER'S STATEMENT

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

OWNER/DEVELOPER SIGNATURE — DATE

## EL PASO COUNTY

COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY, THROUGH THE APPROVAL OF THIS DOCUMENT, ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL VOLUMES 1 AND 2, AND ENGINEERING CRITERIA MANUAL, AS AMENDED.

IN ACCORDANCE WITH ECM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTOR'S DISCRETION.

JENNIFER IRVINE, PE
COUNTY ENGINEER / ECM ADMINISTRATOR — DATE


STERLING DESIGN ASSOCIATES
Civil Engineers | Landscape Architects
2009 W. Littleton Blvd. #300 Littleton, CO 80120
303.794.4727 | www.SterlingDesignAssociates.com

PREPARED UNDER THE DIRECT SUPERVISION OF
JAY M. NEWELL, PE
COLORADO REGISTRATION 35219
FOR & ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC


COLORADO REGISTERED JAY M. NEWELL 35219 PROFESSIONAL ENGINEER

8 / 10 / 22

STERLING DESIGN ASSOCIATES, LLC

ISSUES & REVISIONS

| | | |
|---|---|---|
| NO.: 1 | DATE: | BY: |
| DESCRIPTION: | | |
| NO.: 2 | DATE: - | BY: - |
| DESCRIPTION: - | | |
| NO.: 3 | DATE: - | BY: - |
| DESCRIPTION: - | | |
| NO.: 4 | DATE: - | BY: - |
| DESCRIPTION: - | | |
| NO.: 5 | DATE: - | BY: - |
| DESCRIPTION: - | | |
| NO.: 6 | DATE: - | BY: - |
| DESCRIPTION: - | | |

DATE: **08/2022**
SCALE: **N/A**
PROJECT MANAGER: **JS**
PROJECT NO.:
DRAWN BY: **JN**
DRAWING FILE:

PROJECT:

**SPACE VILLAGE FILING NO. 4**
**EL PASO COUNTY, CO**

CLIENT:

COMMERCIAL BUILDING SERVICES
7561 S. GRANT STR., SUITE A-4
LITTLETON, COLORADO 80122

TEL: (303) 730-3001

SHEET TITLE:

**GRADING & EROSION CONTROL COVER SHEET (SWMP-SITE MAP)**

SHEET NUMBER:

**1** **C900**

# SPACE VILLAGE FILING NO. 4
## A PORTION OF THE NW 1/4 OF SEC. 17, T14S, R65W, OF THE 6th P.M., EL PASO COUNTY, COLORADO
## PRELIMINARY DRAINAGE PLAN

## EL PASO COUNTY STANDARD NOTES

1. ALL MATERIALS, WORKMANSHIP, AND CONSTRUCTION OF IMPROVEMENTS SHALL MEET OR EXCEED THE GOVERNING CITY, COUNTY AND/OR STATE AND APPLICABLE UTILITY DISTRICT STANDARDS AND SPECIFICATIONS, AND APPLICABLE STATE AND FEDERAL REGULATIONS. WHERE THERE IS CONFLICT BETWEEN THESE PLANS AND ANY APPLICABLE STANDARDS, THE HIGHER QUALITY STANDARD SHALL APPLY. ALL WORK SHALL BE INSPECTED AND APPROVED BY THE CITY AND APPLICABLE UTILITY DISTRICT(S).

2. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS, AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB ON SITE AT ALL TIMES.

3. ALL REFERENCES TO ANY PUBLISHED STANDARDS SHALL REFER TO THE LATEST REVISION OF SAID STANDARDS, UNLESS SPECIFICALLY STATED OTHERWISE.

4. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR THE COMPLETION OF THE INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED TO BE PROVIDED, INSTALLED, CONSTRUCTED, REMOVED, AND RELOCATED UNLESS SPECIFICALLY NOTED OTHERWISE.

5. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR RECEIVING, UNLOADING, STORING, AND UNCRATING ALL EQUIPMENT FURNISHED BY THE OWNER/DEVELOPER AND DELIVERED TO THE SITE.

6. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES, AS SHOWN ON THESE PLANS, IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS, ESPECIALLY AT THE CONNECTION POINTS AND AT POTENTIAL UTILITY CONFLICTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES THAT CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.

7. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH THE GOVERNING CITY, COUNTY, AND/OR STATE AND ALL UTILITY COMPANIES/DISTRICTS INVOLVED WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION AND TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL PARTIES AFFECTED BY ANY DISRUPTION OF ANY UTILITY SERVICE.

8. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL UTILITY RELOCATIONS, WHETHER SHOWN OR NOT SHOWN ON THE PLANS.

9. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES/DISTRICTS TO OBTAIN TEMPORARY POWER, TELEPHONE AND WATER SERVICE DURING CONSTRUCTION. ALL COST FOR TEMPORARY SERVICES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND LICENSES FOR WORK INCLUDING, BUT NOT LIMITED TO DEMOLITION, STREET CUTS, UTILITY INTERFERENCES, TRAFFIC CONTROL, GRADING, AND UTILITY FROM ALL APPLICABLE AGENCIES; AND FOR COMPLYING WITH ALL PROVISIONS INCLUDED THEREIN.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS OF PROJECT SAFETY INCLUDING, BUT NOT LIMITED TO, EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY.

12. THE CONTRACTOR SHALL INSTALL AND MAINTAIN CONSTRUCTION FENCE PRIOR TO, AND THROUGHOUT CONSTRUCTION.

13. UTILITY TRENCHES ARE TO BE SLOPED OR BRACED AND SHEETED AS NECESSARY TO FURNISH SAFE WORKING CONDITIONS FOR THE WORKMEN AND THE PROTECTION OF OTHER UTILITIES IN COMPLIANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL HEALTH AND SAFETY RULES AND REGULATIONS.

14. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN, IN ACCORDANCE WITH THE M.U.T.C.D. TO THE APPROPRIATE RIGHT-OF-WAY AUTHORITY (CITY, COUNTY, OR STATE) FOR APPROVAL, PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN, OR AFFECTING, THE RIGHT-OF-WAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY AND ALL TRAFFIC CONTROL DEVICES AS MAY BE REQUIRED BY THE CONSTRUCTION ACTIVITIES.

15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WORK, INSPECTIONS, AND CERTIFICATIONS AS REQUIRED BY THE CITY, STATE, OR LOCAL DISTRICTS. ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED SHALL BE PERFORMED PRIOR TO ANNOUNCED BUILDING POSSESSION AND THE FINAL CONNECTION OF SERVICES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COST ASSOCIATED WITH INSPECTION AND CERTIFICATION UNLESS OTHERWISE ARRANGED WITH THE OWNER/DEVELOPER; AND SHALL COORDINATE ALL CERTIFICATIONS, AND PROVIDE FIELD SURVEYED AS-BUILT INFORMATION FOR REVIEW BY THE OWNER/DEVELOPER AND/OR ENGINEER AS EARLY AS POSSIBLE IN THE CONSTRUCTION SCHEDULE TO AVOID POTENTIAL DELAYS.

16. THE CONTRACTOR SHALL NOTIFY THE GOVERNING CITY, COUNTY, AND/OR STATE AND LOCAL UTILITY COMPANIES/DISTRICTS AT LEAST 48 HOURS PRIOR TO THE START OF ANY CONSTRUCTION.

17. THE CONTRACTOR SHALL NOTIFY THE GOVERNING CITY, COUNTY, AND/OR STATE AND LOCAL UTILITY COMPANIES/DISTRICTS AT LEAST 48 HOURS PRIOR TO THE START OF ANY EARTH DISTURBING ACTIVITY.

18. ALL STRUCTURAL EROSION CONTROL MEASURES SHALL BE INSTALLED AT THE LIMITS OF CONSTRUCTION, PRIOR TO ANY GROUND-DISTURBING ACTIVITY. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED IN GOOD REPAIR BY THE CONTRACTOR UNTIL SUCH TIME AS THE ENTIRE DISTURBED AREA IS STABILIZED WITH HARD SURFACE OR PERMANENT LANDSCAPING. THE CONTRACTOR IS RESPONSIBLE FOR REFERRING TO ANY EROSION AND SEDIMENT CONTROL, STORMWATER MANAGEMENT, STORMWATER POLLUTION PREVENTION, OR SIMILAR PLAN AND/OR NARRATIVE AND ASSOCIATED PERMITS INCLUDING, BUT NOT LIMITED TO GRADING PERMITS; AND COMPLYING WITH THE REQUIREMENTS THEREIN.

19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ROADWAYS FREE AND CLEAR OF ALL CONSTRUCTION DEBRIS AND DIRT TRACKED FROM THE SITE.

20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION OF ANY EXISTING IMPROVEMENTS INCLUDING, BUT NOT LIMITED TO STREET PAVEMENT, FENCES, SOD, LANDSCAPING, SPRINKLER SYSTEMS, AND UTILITIES DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL LOCATION AND CONDITION.

21. INCLUDED IN THIS PACKAGE IS THE DEMOLITION AND DISPOSAL OF ALL EXISTING UTILITIES, SITE IMPROVEMENTS AND SITE FURNISHINGS NEEDED FOR CONSTRUCTION OF THE IMPROVEMENTS SHOWN IN THIS SET OF CONSTRUCTION DRAWINGS. ALL QUESTIONS IN REGARD TO DEMOLITION SHALL BE SUBMITTED TO THE OWNER IN WRITING PRIOR TO BID.

22. ALL DEMOLITION, REMOVAL, DISPOSAL AND ABANDONMENT OF UTILITIES, STRUCTURES, SITE IMPROVEMENTS AND SITE FURNISHINGS SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL STANDARDS AND SPECIFICATIONS, AND PERMIT REQUIREMENTS.

23. DIMENSIONS FOR LAYOUT AND CONSTRUCTION ARE NOT TO BE SCALED FROM ANY DRAWING. IF PERTINENT DIMENSIONS ARE NOT SHOWN, CONTACT THE CONSULTING ENGINEER FOR CLARIFICATION, AND ANNOTATE THE DIMENSION ON THE AS-BUILT RECORD DRAWINGS.

24. RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATIONS. THE CONTRACTOR SHALL USE PRECAST CONCRETE ADJUSTMENT RINGS, GROUT, AND STEEL SHIMS TO ADJUST THE MANHOLE FRAMES TO THE REQUIRED FINAL GRADE IN CONFORMANCE WITH THE CITY OR UTILITY COMPANY/DISTRICT STANDARD SPECIFICATIONS. ALL FRAMES SHALL BE ADJUSTED TO FINISH GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.

25. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT AT THE CONSTRUCTION SITE WHICH SHALL BE AVAILABLE TO THE GOVERNING CITY, COUNTY, AND/OR STATE AND UTILITY DISTRICT INSPECTOR AT ALL TIMES.

26. AS-BUILT PLANS AND FIELD NOTES SHALL BE PROVIDED BY THE CONTRACTOR TO THE CITY, COUNTY, STATE, FEDERAL OR UTILITY DISTRICT; OR TO THE OWNER/DEVELOPER AS REQUIRED BY AND IN ACCORDANCE WITH THE GOVERNING AUTHORITY'S OR OWNER/DEVELOPER'S CRITERIA. THE CONTRACTOR SHALL CONFIRM ANY REQUIREMENTS AS EARLY AS POSSIBLE IN THE CONSTRUCTION SCHEDULE TO ACCOUNT FOR PREPARATION AND REVIEW OF THE INFORMATION TO AVOID POTENTIAL DELAYS.

27. NO REVISIONS SHALL BE MADE TO THESE PLANS WITHOUT THE APPROVAL OF THE OWNER/DEVELOPER AND THE ENGINEER OF RECORD.

28. IF, DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED BY THE CONTRACTOR, HIS SUBCONTRACTORS, OR OTHER AFFECTED PARTIES, WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED IN THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE PROJECT MANAGER FOR THE OWNER/DEVELOPER AND THE ENGINEER IMMEDIATELY.

29. BENCHMARK VERIFICATION: THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS AND PROPOSED ELEVATIONS IN THIS CONSTRUCTION PLAN SET AGAINST THE PROJECT BENCHMARK, IDENTIFIED HEREIN, PRIOR TO COMMENCING WORK.

30. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH THE GOVERNING AUTHORITY'S STANDARDS AND SPECIFICATIONS.

31. THE SITE CONSTRUCTION PLANS LISTED WITHIN THIS PLAN SET ARE NOT FOR CONSTRUCTION UNLESS APPROVED BY THE APPROPRIATE GOVERNING JURISDICTION. THE CONTRACTOR SHALL CONFIRM SAID APPROVAL PRIOR TO CONSTRUCTION.

32. THE SITE CONSTRUCTION PLANS INDICATE THE WORK TO BE COMPLETED FOR THE PROJECT. THE CONTRACTOR SHALL COORDINATE SAID WORK WITH THE OWNER AND THE TENANT CONSTRUCTION MANAGER(S) TO CONFIRM THE LIMITS AND DETAILS OF THE WORK TO BE PROVIDED AND COMPLETED. CONSTRUCTION SHALL ALSO BE COORDINATED WITH TENANT IMPROVEMENT PLANS AND LANDLORD WORKLETTER.

33. IF, DURING THE OVERLOT GRADING PROCESS, CONDITIONS ARE ENCOUNTERED BY THE CONTRACTOR, HIS SUBCONTRACTORS, OR OTHER AFFECTED PARTIES, WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED IN THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE GEOTECHNICAL ENGINEER IMMEDIATELY FOR RECOMMENDATIONS.

34. ALL EARTHWORK, GRADING, OVERLOT GRADING, BACKFILLING, FILLING, EXCAVATION, COMPACTION, PAVEMENT, AND FLATWORK CONSTRUCTION WILL BE IN ACCORDANCE WITH THE RECOMMENDATIONS FROM A GEOTECHNICAL INVESTIGATION PREPARED SPECIFICALLY FOR THIS SITE.

35. ALL CONCRETE PAVEMENT, CONCRETE FLATWORK, CONCRETE STRUCTURES AND CONCRETE UTILITIES SHALL BE IN ACCORDANCE WITH THE MATERIAL RECOMMENDATIONS FROM A GEOTECHNICAL INVESTIGATION PREPARED SPECIFICALLY FOR THIS SITE.

36. THE EARTHWORK FOR ANY BUILDING FOUNDATIONS AND SLABS SHALL BE IN ACCORDANCE WITH ARCHITECTURAL AND STRUCTURAL PLANS AND SPECIFICATIONS, AND THE GEOTECHNICAL INVESTIGATION.

37. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS WHICH DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS AND SPECIFIC PROFILE DESIGN SHALL BE USED FOR SETTING ELEVATIONS OF CURB AND GUTTER AND UTILITIES.

38. SPOT ELEVATIONS REPRESENT FLOWLINE (BOTTOM FACE OF CURB) WHERE SHOWN AT CURB AND GUTTER UNLESS OTHERWISE NOTED.

39. CONTOURS SHOWN ARE FOR FINISHED PAVING, SIDEWALK, SLAB, OR GROUND. ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY.

40. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.

41. THE CONTRACTOR SHALL HAVE FORMS CHECKED BY A SURVEYOR FOR INSTALLATIONS OF CURB & GUTTER OR CROSSPANS ADJACENT TO EXISTING PAVING. THE CROSS SLOPE SHALL NOT BE LESS THAN 2% OR GREATER THAN 4% FROM THE ESTABLISHED SAWCUT LINE TO THE PROPOSED EDGE OF CONCRETE. DO NOT PLACE CONCRETE IN APPLICABLE FORMS THAT HAVE NOT BEEN CHECKED, DO NOT PROVIDE CROSS SLOPES WITHIN THE SPECIFIED RANGE, OR APPEAR IN ANY WAY INCONSISTENT WITH SMOOTH AND CONTINUOUS TRAFFIC AND PEDESTRIAN OPERATIONS. CONTACT THE ENGINEER IMMEDIATELY FOR CLARIFICATIONS OR CORRECTIONS.

42. THE CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.

43. THE CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL LANDSCAPED AND PAVED AREA.

44. ALL DISTURBED AREAS THAT ARE NOT DESIGNATED TO BE PAVED SHALL BE LANDSCAPED OR SEEDED, ACCORDING TO THE LANDSCAPE PLAN.

45. EXISTING DRAINAGE STRUCTURES SHALL BE INSPECTED AND REPAIRED AS NEEDED, AND EXISTING PIPES CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.

46. IF ANY EXISTING STRUCTURES, SIDEWALK, AND/OR CURB AND GUTTER, MODIFIED OR REMAINING, ARE DAMAGED DURING CONSTRUCTION, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER PRIOR TO PROJECT CLOSEOUT.

47. ALL GRATES, MANHOLE RIMS, VALVE BOXES, VALVE COVERS, CLEANOUTS, AND VAULT OR BOX COVERS SHALL BE ADJUSTED TO THE "AS CONSTRUCTED" FINISHED GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.

48. NO PROPOSED SLOPE IN LANDSCAPED AREAS OR OPEN SPACE SHALL EXCEED THREE (3) HORIZONTAL FEET TO ONE (1) VERTICAL FOOT, OR AS OTHERWISE SPECIFIED BY LOCAL CRITERIA.

49. THE CONTRACTOR SHALL PROTECT THE PROJECT BENCHMARK THROUGHOUT CONSTRUCTION AND SET ADDITIONAL PROJECT BENCHMARKS AS NECESSARY TO MAINTAIN VERTICAL CONTROL THROUGHOUT THE DURATION OF THE PROJECT.

50. THE CONTRACTOR SHALL FILL AND COMPACT BASEMENTS, CESSPOOLS, AND OTHER LARGE EXCAVATED AREAS WITH CLEAN FILL SUITABLE TO THE OWNER, AND IN ACCORDANCE WITH RECOMMENDATIONS OBTAINED FROM THE GEOTECHNICAL INVESTIGATION OR GEOTECHNICAL ENGINEER AND GRADE TO MATCH EXISTING OR PROPOSED FINISH GRADE; OR CONFIRM SUCH WORK HAS BEEN PERFORMED PRIOR TO CONSTRUCTION.

51. SITE IMPROVEMENTS ARE REQUIRED TO BE COVERED UNDER THE COLORADO DISCHARGE PERMIT SYSTEM (CDPS) GENERAL PERMIT COR400000 FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES AS WELL AS EL PASO COUNTY REGULATIONS. STATE PERMIT APPLICATION SHALL BE MADE WITH THE COLORADO DEPARTMENT OF HEALTH & THE ENVIRONMENT THROUGH THE COLORADO ENVIRONMENTAL ONLINE SYSTEM (CEOS) ACCESSIBLE AT HTTPS://CEOS.COLORADO.GOV/CO/CEOS/PUBLIC. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING, COMPLETING, AND SUBMITTING ANY EL PASO COUNTY APPLICATION OR RELATED DOCUMENTS.

52. PERMIT(S) COVERAGE REQUIRES THE DEVELOPMENT OF A STORMWATER MANAGEMENT PLAN (PLAN) IDENTIFYING AND ADDRESSING THE FOLLOWING ITEMS SPECIFIC TO THIS CONSTRUCTION ACTIVITY: (A) QUALIFIED STORMWATER MANAGER, (B) SPILL PREVENTION AND RESPONSE PLAN, (C) MATERIALS HANDLING, (D) POTENTIAL SOURCES OF POLLUTION, (E) IMPLEMENTATION OF CONTROL MEASURES, (F) SITE DESCRIPTION, (G) SITE MAP, (H) FINAL STABILIZATION AND LONG TERM STORMWATER MANAGEMENT, AND (I) SITE INSPECTION REPORTS.

53. STERLING DESIGN ASSOCIATES, LLC HAS PREPARED AND MADE AVAILABLE A PLAN FOR THE OWNER PROVIDING FOR LOCAL JURISDICTIONAL ENTITLEMENT REVIEW, ONLY. THE PLAN IS INCOMPLETE WITHOUT ADDITIONAL INPUT FROM THE OPERATOR; INCLUDING, BUT NOT LIMITED TO, IDENTIFICATION OF THE PROJECT STORMWATER MANAGER AND INCLUSION OF A DETAILED CONSTRUCTION AND CONTROL MEASURE IMPLEMENTATION SCHEDULE. THE OPERATOR IS SOLELY RESPONSIBLE FOR COMPLETENESS AND IMPLEMENTATION OF A PLAN COMPLIANT WITH THE CDPS COR400000 AND LOCAL PERMIT REQUIREMENTS AT ALL TIMES OF SITE PERMIT COVERAGE.

54. THE OWNER AND OPERATOR MUST IMPLEMENT THE PROVISIONS OF THE PLAN AS WRITTEN AND AS MAY BE UPDATED, FROM COMMENCEMENT OF CONSTRUCTION ACTIVITY UNTIL FINAL STABILIZATION IS COMPLETE.

55. THE OPERATOR SHALL ENSURE ALL MATERIALS IMPORTED OR EXPORTED FROM THE SITE ARE PROPERLY SECURED AND COVERED TO PREVENT LOSS DURING TRANSPORT. ALL HAUL ROUTES SHALL BE DOCUMENTED WITHIN THE PLAN. ALL OFF-SITE SPOIL, BORROW, AND WASTE DISPOSAL FACILITIES SHALL BE PROPERLY PERMITTED FOR OPERATION.

## CAUTION - NOTICE TO CONTRACTOR

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING IMPROVEMENTS AND UTILITIES AND SHALL REPAIR ANY DAMAGE AT HIS EXPENSE.

811 Know what's below. Call before you dig.


STERLING DESIGN ASSOCIATES
Civil Engineers | Landscape Architects
2009 W. Littleton Blvd. #300 Littleton, CO 80120
303.794.4727 | www.SterlingDesignAssociates.com

PREPARED UNDER THE DIRECT SUPERVISION OF
JAY M. NEWELL, PE
COLORADO REGISTRATION 35219
FOR & ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC

COLORADO REGISTERED JAY M. NEWELL 35219 PROFESSIONAL ENGINEER

8 / 10 / 22

STERLING DESIGN ASSOCIATES, LLC


ISSUES & REVISIONS

| NO.: | DATE: | BY: | DESCRIPTION: |
|---|---|---|---|
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| DATE: 08/2022 | SCALE: N/A |
| PROJECT MANAGER: JS | PROJECT NO.: |
| DRAWN BY: JN | DRAWING FILE: |

PROJECT:

**SPACE VILLAGE FILING NO. 4**
**EL PASO COUNTY, CO**

CLIENT:

COMMERCIAL BUILDING SERVICES
7561 S. GRANT STR., SUITE A-4
LITTLETON, COLORADO 80122

TEL: (303) 730-3001

SHEET TITLE:

**GRADING & EROSION CONTROL NOTES (SWMP-SITE MAP)**

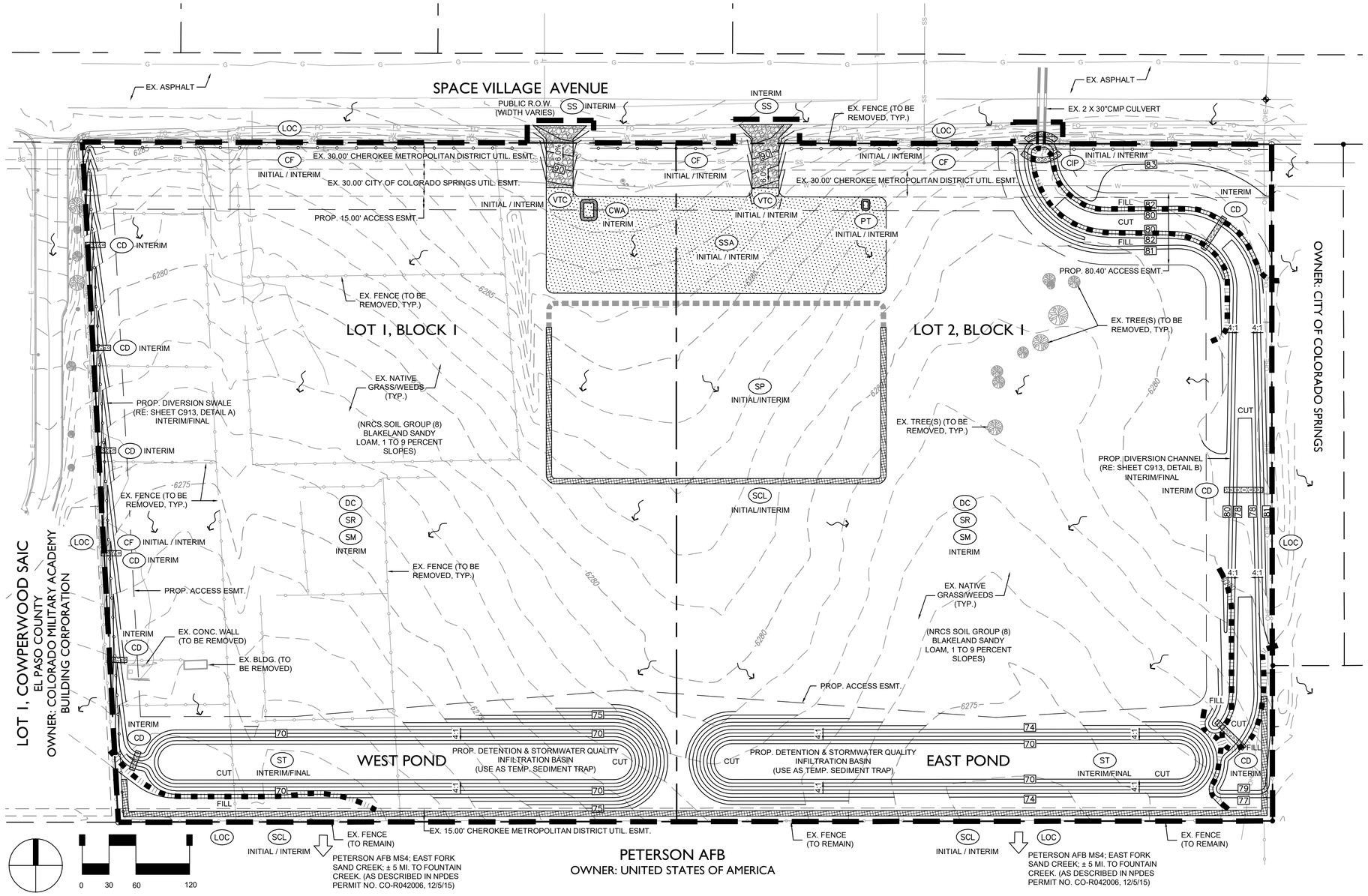
SHEET NUMBER:

**2** **C901**

# SPACE VILLAGE FILING NO. 4

## A PORTION OF THE NW 1/4 OF SEC. 17, T14S, R65W, OF THE 6th P.M., EL PASO COUNTY, COLORADO

## GRADING & EROSION CONTROL PLAN




## CAUTION - NOTICE TO CONTRACTOR

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THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING IMPROVEMENTS AND UTILITIES AND SHALL REPAIR ANY DAMAGE AT HIS EXPENSE.

Know what's **below.** **Call** before you dig.

## LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- EASEMENT LINE
- EXIST. MAJOR CONTOUR
- EXIST. MINOR CONTOUR
- PROP. CONTOUR
- EXIST. FENCE
- EXIST. EDGE OF ASPHALT
- EXIST. CURB AND GUTTER
- EXIST. OVERHEAD ELECTRIC
- EXIST. SANITARY SEWER
- EXIST. WATERLINE
- EXIST. GAS LINE
- EXIST. ELECTRIC
- EXIST. TELEPHONE
- EXIST. FIBER OPTIC
- PROP. CONCRETE
- LOC — LIMITS OF CONSTRUCTION
- CF — CONSTRUCTION FENCE (TYPE = FENCE (TYP. ALL))
- SCL — SEDIMENT CONTROL LOG
- CD — CHECK DAM
- DISCHARGE POINT
- FLOW DIRECTION
- VTC — VEHICLE TRACKING CONTROL (PRE-MANUFACTURED MAT) (FOR USE ON TOP OF EXISTING PAVEMENT)
- SSA — STABILIZED STAGING AREA
- CWA — CONCRETE WASHOUT AREA
- CUT/FILL LIMIT
- PT — PORTABLE TOILET(S)
- CIP — CULVERT INLET PROTECTION
- ST — SEDIMENT TRAP
- SR — SURFACE ROUGHENING
- SM — SEEDING & MULCHING
- DC — DUST CONTROL
- SS — STREET SWEEPING
- SP — STOCKPILE MANAGEMENT

## BENCHMARK

AS PROVIDED ON *ALTA/NSPS LAND TITLE SURVEY* PREPARED BY ALTURA LAND CONSULTANTS, DATED APRIL 28, 2022 FOR THIS PROJECT:

"NGS BENCHMARK "R 76" - LOCATED 0.2 MILE EAST ALONG HIGHWAY 94, FROM PETERSON ROAD, 22 FEET SOUTH-SOUTHEAST OF THE SOUTHEAST CORNER OF AN ADDITION TO THE BUILDING (SANDY'S RESTAURANT), 48 FEET NORTH OF THE CENTERLINE OF THE HIGHWAY, 3.5 FEET SOUTH OF A POWER POLE AND 3 FEET SOUTH OF A FIBERGLASS WITNESS POST. ELEVATION = 6289.86 FEET (NAVD 1988)"

## GENERAL NOTES

1. REFER TO SHEETS C900 AND C901 FOR PROJECT GENERAL NOTES.
2. THE PLAN SHALL NOT SUBSTANTIALLY CHANGE THE DEPTH OF COVER, OR ACCESS TO UTILITY FACILITIES. ADDITIONALLY, THE PLAN SHALL NOT INCREASE OR DIVERT WATER TOWARDS UTILITY FACILITIES. ANY CHANGES TO UTILITY FACILITIES TO ACCOMODATE THE PLAN, MUST BE DISCUSSED AND AGREED TO BY THE AFFECTED UTILITY PRIOR TO IMPLEMENTING THE PLAN. THE RESULTING COST TO RELOCATE OR PROTECT UTILITIES, OR PROVIDE INTERIM ACCESS IS AT THE EXPENSE OF THE PLAN APPLICANT.

## CUT/FILL SUMMARY

| | | |
|---|---|---|
| CUT | = | ± 17,941 CY |
| FILL | = | ± 1,248 CY |
| EXPORT | = | ± 16,693 CY |
| (EXPORT OVER 22.8 AC. = 0.45') | | |
| FINAL EXPORT | = | ± 0 CY |

CUT AND FILL ANALYSIS IS FROM EXISTING FINISH GRADE TO PROPOSED FINISH GRADE AND DOES NOT ACCOUNT FOR COMPACTION, SHRINK/SWELL, PAVEMENT SECTIONS, ETC., AND IS THEREFORE APPROXIMATE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.


STERLING DESIGN ASSOCIATES
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PREPARED UNDER THE DIRECT SUPERVISION OF
JAY M. NEWELL, PE
COLORADO REGISTRATION 35219
FOR & ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC


COLORADO REGISTERED JAY M. NEWELL 35219 PROFESSIONAL ENGINEER

8 / 10 / 22

STERLING DESIGN ASSOCIATES, LLC

ISSUES & REVISIONS

NO.: 1 DATE: BY:
DESCRIPTION:
NO.: 2 DATE: - BY: -
DESCRIPTION: -
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NO.: 5 DATE: - BY: -
DESCRIPTION: -
NO.: 6 DATE: - BY: -
DESCRIPTION: -

DATE: 08/2022
SCALE: 1" = 60'-0"
PROJECT MANAGER: JS
PROJECT NO.:
DRAWN BY: JN
DRAWING FILE:

PROJECT:

**SPACE VILLAGE FILING NO. 4**
**EL PASO COUNTY, CO**

CLIENT:

COMMERCIAL BUILDING SERVICES
7561 S. GRANT STR., SUITE A-4
LITTLETON, COLORADO 80122

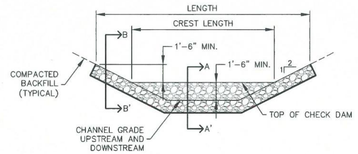
TEL: (303) 730-3001

SHEET TITLE:

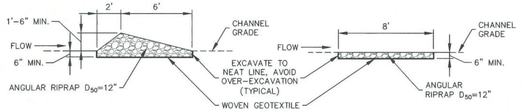
**GRADING & EROSION CONTROL PLAN (SWMP-SITE MAP)**

SHEET NUMBER:

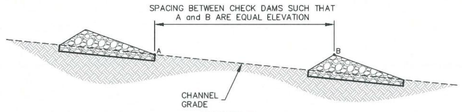
**3** **C905**




CHECK DAM ELEVATION VIEW




SECTION A-A' SECTION B-B'




PROFILE

INSTALLATION NOTES

1. CHECK DAMS SHOULD BE INSTALLED BEFORE UPSTREAM LAND DISTURBING ACTIVITIES.
2. RIPRAP PAD SHOULD BE TRENCHED INTO GROUND BY A MINIMUM OF 6".

MAINTENANCE NOTES

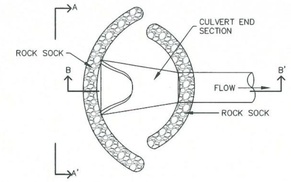
1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES ½ THE HEIGHT OF THE CHECK DAM CREST.
3. CHECK DAMS MUST REMAIN UNTIL THE UPSTREAM DISTURBANCE AREA IS STABILIZED.
4. PERMANENTLY STABILIZE AREA AFTER CHECK DAMS ARE REMOVED IF REMOVAL IS REQUIRED.

CD

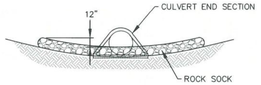
STORMWATER ENTERPRISE — CHECK DAM

APPROVED: SWENT MANAGER

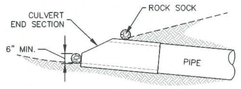
| ISSUED: | REVISED: | DRAWING NO. |
|---|---|---|
| 10/7/19 | 8/19/2020 | 900-CD |




CULVERT INLET PROTECTION PLAN




SECTION A-A'




SECTION B-B'

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ACCUMULATED SEDIMENT UPSTREAM OF THE CULVERT SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS ½ HEIGHT OF THE ROCK SOCK.
3. CULVERT INLET PROTECTION SHALL REMAIN UNTIL THE UPSTREAM AREA IS PERMANENTLY STABILIZED.

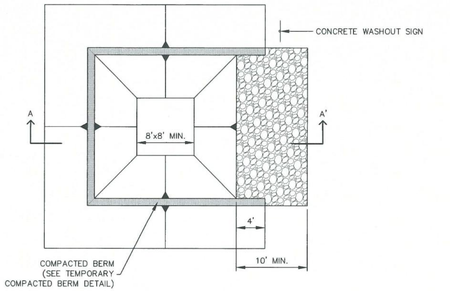
CIP

STORMWATER ENTERPRISE — CULVERT INLET PROTECTION

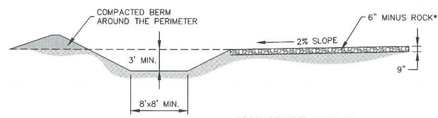
APPROVED: SWENT MANAGER

| ISSUED: | REVISED: | DRAWING NO. |
|---|---|---|
| 10/7/19 | 8/19/2020 | 900-CIP |

( MODIFIED AUGUST 2022)




CONCRETE WASHOUT AREA PLAN




SECTION A-A'

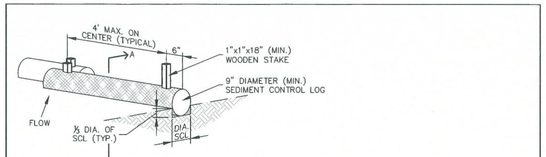
*ROCK REQUIRED BASED ON SITE CONDITIONS AT THE DISCRETION OF THE GEC INSPECTOR

CWA

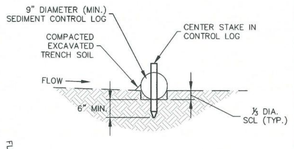
STORMWATER ENTERPRISE — CONCRETE WASHOUT AREA

APPROVED: SWENT MANAGER

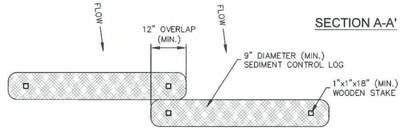
| ISSUED: | REVISED: | DRAWING NO. |
|---|---|---|
| 10/7/19 | 8/19/2020 | 900-CWA-1 |




SEDIMENT CONTROL LOG




SECTION A-A'




SEDIMENT CONTROL LOG JOINTS

INSTALLATION NOTES

1. ALL SEDIMENT CONTROL LOGS MUST BE EMBEDDED TO ½ OF THE HEIGHT OF THE LOG
2. LARGER DIAMETER SEDIMENT CONTROL LOGS NEED TO BE EMBEDDED DEEPER.
3. PLACE SEDIMENT CONTROL LOG AGAINST SIDEWALK OR BACK OF CURB WHEN ADJACENT TO THESE FEATURES.
4. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR OR COCONUT FIBER, AND SHALL BR FREE FROM ANY NOXIOUS WEED SEEDS OF DEFECTS INCLUDING RIPS, HOLES AND OBVIOUS WEAR.
5. IF USING AS SLOPE PROTECTION, INSTALL SEDIMENT CONTROL LOGS ALONG THE CONTOUR.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES ½ OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.
3. PERMANENTLY STABILIZE AREA AFTER SEDIMENT CONTROL LOGS HAVE BEEN REMOVED.

SCL

STORMWATER ENTERPRISE — SEDIMENT CONTROL LOGS

APPROVED: SWENT MANAGER

| ISSUED: | REVISED: | DRAWING NO. |
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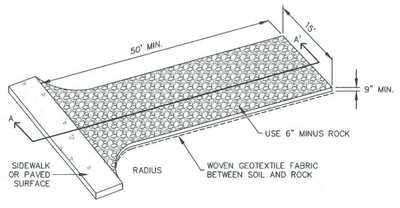
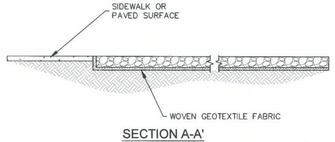
| 10/7/19 | 8/19/2020 | 900-SCL |




AGGREGATE VEHICLE TRACKING CONTROL




SECTION A-A'

INSTALLATION NOTES

1. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHOULD BE LOCATED AT ALL POINTS WHERE VEHICLES EXIT THE CONSTRUCTION SITE TO ADJACENT ROADWAY.
2. STABILIZED CONSTRUCTION ENTRANCE/EXITS SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
3. RADIUS MUST BE ADEQUATE FOR INTENDED CONSTRUCTION VEHICLE TURNING.
4. ROCK SHOULD CONSIST OF 6" MINUS ROCK.
5. INSTALL CONSTRUCTION FENCE ON BOTH SIDES OF VEHICLE TRACKING CONTROL PAD WHEN NEEDED OR REQUIRED BY INSPECTOR.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. SEDIMENT TRACKED ONTO THE ADJACENT ROAD SHALL BE REMOVED DAILY, BY SWEEPING OR SHOVELING, AND NEVER WASHED DOWN STORM DRAINS.
3. ROUGHEN, REPLACE AND/OR ADD ROCK AS NEEDED TO MAINTAIN CONSISTENT DEPTH AND TO PREVENT SEDIMENT TRACKING ONTO ADJACENT STREET.
4. PERMANENTLY STABILIZE AREA AFTER VEHICLE TRACKING CONTROL IS REMOVED.

VTC

STORMWATER ENTERPRISE — VEHICLE TRACKING CONTROL

APPROVED: SWENT MANAGER

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INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATION OF CONCRETE WASHOUT AREA
2. LOCATE AT LEAST 50' AWAY FROM STATE WATERS MEASURED HORIZONTALLY.
3. AN IMPERMEABLE LINER (16 MIL. MINIMUM THICKNESS) IS REQUIRED IF CONCRETE WASH AREA IS LOCATED WITHIN 400' OF STATE WATERS OR 1000' OF WELLS OR DRINKING WATER SOURCES.
4. DO NOT LOCATE IN AREAS WHERE SHALLOW GROUNDWATER MAY BE PRESENT.
5. THE CONCRETE WASH AREA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
6. CONCRETE WASH AREA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8'.
7. BERM SURROUNDING SIDES AND BACK OF CONCRETE WASH AREA SHALL HAVE A MINIMUM HEIGHT OF 2 FEET.
8. CONCRETE WASH AREA ENTRANCE SHALL BE SLOPED 2% TOWARDS THE CONCRETE WASH AREA.
9. SIGNS SHALL BE PLACED AT THE CONCRETE WASH AREA.
10. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. THE CONCRETE WASH AREA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS ACCUMULATED IN THE PIT SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF ⅓ THE HEIGHT OF THE CONCRETE WASH AREA.
3. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE, AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER–TIGHT CONTAINER AND DISPOSED OF PROPERLY.
4. THE CONCRETE WASH AREA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
5. PERMANENTLY STABILIZE AREA AFTER CONCRETE WASH AREA IS REMOVED.

CWA

STORMWATER ENTERPRISE — CONCRETE WASHOUT AREA

APPROVED: SWENT MANAGER

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FOR & ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC

COLORADO REGISTERED JAY M. NEWELL 35219 PROFESSIONAL ENGINEER

8 / 10 / 22

STERLING DESIGN ASSOCIATES, LLC

ISSUES & REVISIONS

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| DATE: 08/2022 | SCALE: N/A |
| PROJECT MANAGER: JS | PROJECT NO.: |
| DRAWN BY: JN | DRAWING FILE: |

PROJECT:

**SPACE VILLAGE FILING NO. 4**
**EL PASO COUNTY, CO**

CLIENT:

COMMERCIAL BUILDING SERVICES
7561 S. GRANT STR., SUITE A-4
LITTLETON, COLORADO 80122

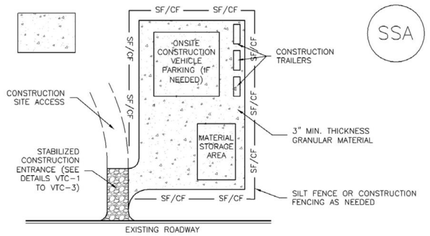
TEL: (303) 730-3001

SHEET TITLE:

**GRADING & EROSION CONTROL DETAILS (SWMP-SITE MAP)**

SHEET NUMBER:

**4** **C910**




## SSA-1. STABILIZED STAGING AREA

STABILIZED STAGING AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   -LOCATION OF STAGING AREA(S).
   -CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.

2. STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.

3. STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE.

4. THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR MATERIAL.

5. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

6. ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.

STABILIZED STAGING AREA MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

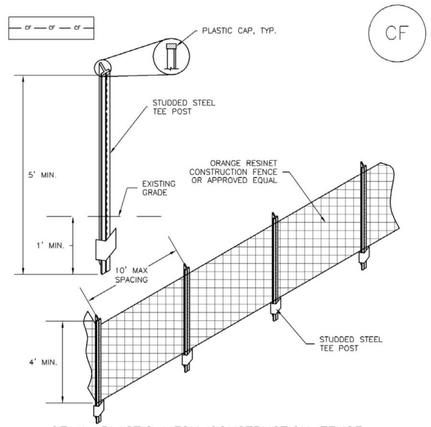
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.








## CF-1. PLASTIC MESH CONSTRUCTION FENCE

CONSTRUCTION FENCE INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   -LOCATION OF CONSTRUCTION FENCE.

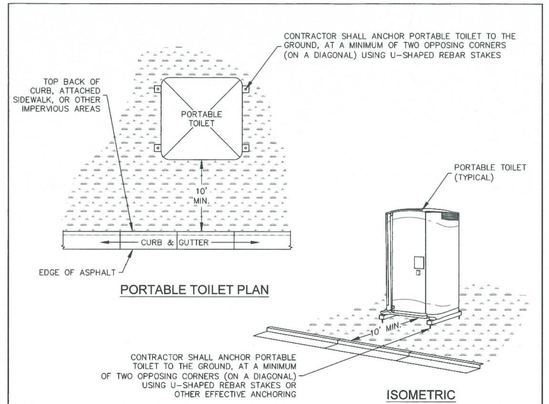
2. CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

3. CONSTRUCTION FENCE SHALL BE COMPOSED OF ORANGE, CONTRACTOR-GRADE MATERIAL THAT IS AT LEAST 4' HIGH. METAL POSTS SHOULD HAVE A PLASTIC CAP FOR SAFETY.

4. STUDDED STEEL TEE POSTS SHALL BE UTILIZED TO SUPPORT THE CONSTRUCTION FENCE. MAXIMUM SPACING FOR STEEL TEE POSTS SHALL BE 10'.

5. CONSTRUCTION FENCE SHALL BE SECURELY FASTENED TO THE TOP, MIDDLE, AND BOTTOM OF EACH POST.






INSTALLATION NOTES:

1. PORTABLE TOILETS SHALL BE PLACED A MINIMUM OF 10 FEET BEHIND ALL CURBS, SIDEWALKS, AND OTHER IMPERVIOUS AREAS; 50 FEET FROM STORM INLETS, AND 100 FEET FROM WATERWAYS.
2. PORTABLE TOILETS IN THE RIGHT-OF-WAY ARE REQUIRED TO BE PLACED ON MOBILE TRAILERS AND MUST BE ANCHORED OR WEIGHTED DOWN. PORTABLE TOILETS MAY BE INSTALLED IN ACCORDANCE WITH NOTE #1 IN STAGING AREAS/YARDS.
3. PORTABLE TOILETS SHALL BE SECURELY ANCHORED TO THE GROUND USING U-SHAPED REBAR STAKES, OR OTHER EFFECTIVE ANCHORING.
4. ANCHORING SHALL BE POSITIONED ON AT LEAST TWO OPPOSING (DIAGONAL) CORNERS.
5. TOILET CONTAINMENT PANS MAY BE USED IN PLACE OF A TRAILER AT THE GEC INSPECTOR'S DISCRETION. TOILET CONTAINMENT PANS MUST BE ANCHORED IN PLACE AND MUST NOT BE USED WITHIN THE CITY R.O.W.

PT

MAINTENANCE NOTES:

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. PORTABLE TOILETS SHALL BE SERVICED AT THE NECESSARY INTERVALS TO ELIMINATE THE POSSIBILITY OF OVERFLOW.
3. WHEN THE PORTABLE TOILETS ARE REMOVED, ANY DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE TOILETS MUST BE PERMANENTLY STABILIZED.

PORTABLE TOILET

APPROVED: SWENC MANAGER

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| 2/19/19 | 8/19/2020 | 900-PTM |

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COLORADO REGISTERED JAY M. NEWELL 35219 PROFESSIONAL ENGINEER

8 / 10 / 22

STERLING DESIGN ASSOCIATES, LLC

ISSUES & REVISIONS

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| DATE: 08/2022 | SCALE: N/A |
| PROJECT MANAGER: JS | PROJECT NO.: |
| DRAWN BY: JN | DRAWING FILE: |

PROJECT:

**SPACE VILLAGE FILING NO. 4**
**EL PASO COUNTY, CO**

CLIENT:

COMMERCIAL BUILDING SERVICES
7561 S. GRANT STR., SUITE A-4
LITTLETON, COLORADO 80122

TEL: (303) 730-3001

SHEET TITLE:

**GRADING & EROSION CONTROL DETAILS (SWMP-SITE MAP)**

SHEET NUMBER:

**5** **C911**



STABILIZED STAGING AREA MAINTENANCE NOTES

5. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.

6. THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

NOTE: MANY MUNICIPALITIES PROHIBIT THE USE OF RECYCLED CONCRETE AS GRANULAR MATERIAL FOR STABILIZED STAGING AREAS DUE TO DIFFICULTIES WITH RE-ESTABLISHMENT OF VEGETATION IN AREAS WHERE RECYCLED CONCRETE WAS PLACED.

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)





CONSTRUCTION FENCE MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. CONSTRUCTION FENCE SHALL BE REPAIRED OR REPLACED WHEN THERE ARE SIGNS OF DAMAGE SUCH AS RIPS OR SAGS. CONSTRUCTION FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

5. WHEN CONSTRUCTION FENCES ARE REMOVED, ALL DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE FENCE SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)





SEDIMENT TRAP INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   -LOCATION, LENGTH AND WIDTH OF SEDIMENT TRAP.

2. SEDIMENT TRAPS SHALL BE INSTALLED PRIOR TO ANY UPGRADIENT LAND-DISTURBING ACTIVITIES.

3. SEDIMENT TRAP BERM SHALL BE CONSTRUCTED FROM MATERIAL FROM EXCAVATION. THE BERM SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.

SEDIMENT TRAP MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

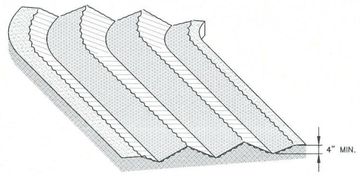
4. REMOVE SEDIMENT ACCUMULATED IN TRAP AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN THE SEDIMENT DEPTH REACHES ½ THE HEIGHT OF THE RIPRAP OUTLET.

5. SEDIMENT TRAPS SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

6. WHEN SEDIMENT TRAPS ARE REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.




SURFACE ROUGHENING

INSTALLATION NOTES

1. SURFACE ROUGHENING MAY BE USED IN AREAS FLATTER THAN 3:1. INSTALL FURROWS ALONG CONTOUR TO INTERCEPT SHEET FLOW.
2. SURFACE ROUGHENING MAY BE ACCOMPLISHED BY FURROWING, SCARIFYING, RIPPING OR DISKING THE SOIL.
3. FURROWS MUST BE A MINIMUM OF 4" IN DEPTH.
4. SURFACE ROUGHENING SHALL NOT BE USED ON EXTREMELY SANDY OR ROCKY SOILS. CONTRACTOR SHALL CONFIRM USE OF SURFACE ROUGHENING WITH COUNTY PRIOR TO ANY APPLICATION.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. VEHICLES AND EQUIPMENT SHALL NOT BE DRIVEN OVER AREAS THAT HAVE BEEN SURFACE ROUGHENED.

SR

STORMWATER ENTERPRISE | SURFACE ROUGHENING

APPROVED: SWENT MANAGER

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| 10/7/19 | 8/19/2020 | 900–SR |

( MODIFIED AUGUST 2022)

## SEEDING & MULCHING

ALL SOIL TESTING, SOILS AMENDMENT AND FERTILIZER DOCUMENTATION, AND SEED LOAD AND BAG TICKETS MUST BE ADDED TO THE CSWMP.

SOIL PREPARATION

1. IN AREAS TO BE SEEDED, THE UPPER 6 INCHES OF THE SOIL MUST NOT BE HEAVILY COMPACTED, AND SHOULD BE IN FRIABLE CONDITION. LESS THAN 85% STANDARD PROCTOR DENSITY IS ACCEPTABLE. AREAS OF COMPACTION OR GENERAL CONSTRUCTION ACTIVITY MUST BE SCARIFIED TO A DEPTH OF 6 TO 12 INCHES PRIOR TO SPREADING TOPSOIL TO BREAK UP COMPACTED LAYERS AND PROVIDE A BLENDING ZONE BETWEEN DIFFERENT SOIL LAYERS.
2. AREAS TO BE PLANTED SHALL HAVE AT LEAST 4 INCHES OF TOPSOIL SUITABLE TO SUPPORT PLANT GROWTH.
3. THE CITY RECOMMENDS THAT EXISTING AND/OR IMPORTED TOPSOIL BE TESTED TO IDENTIFY SOIL DEFICIENCIES AND ANY SOIL AMENDMENTS NECESSARY TO ADDRESS THESE DEFICIENCIES. SOIL AMENDMENTS AND/OR FERTILIZERS SHOULD BE ADDED TO CORRECT TOPSOIL DEFICIENCIES BASED ON SOIL TESTING RESULTS.
4. TOPSOIL SHALL BE PROTECTED DURING THE CONSTRUCTION PERIOD TO RETAIN ITS STRUCTURE AVOID COMPACTION, AND TO PREVENT EROSION AND CONTAMINATION. STRIPPED TOPSOIL MUST BE STORED IN AN AREA AWAY FROM MACHINERY AND CONSTRUCTION OPERATIONS, AND CARE MUST BE TAKEN TO PROTECT THE TOPSOIL AS A VALUABLE COMMODITY. TOPSOIL MUST NOT BE STRIPPED DURING UNDESIRABLE WORKING CONDITIONS (E.G. DURING WET WEATHER OR WHEN SOILS ARE SATURATED). TOPSOIL SHALL NOT BE STORED IN SWALES OR IN AREAS WITH POOR DRAINAGE.

SEEDING

1. ALLOWABLE SEED MIXES ARE INCLUDED IN THE CITY OF COLORADO SPRINGS STORMWATER CONSTRUCTION MANUAL. ALTERNATIVE SEED MIXES ARE ACCEPTABLE IF INCLUDED IN AN APPROVED LANDSCAPING PLAN.
2. SEED SHOULD BE DRILL–SEEDED WHENEVER POSSIBLE
   - SEED DEPTH MUST BE ½ TO ¾ INCHES WHEN DRILL–SEEDING IS USED
3. BROADCAST SEEDING OR HYDRO–SEEDING WITH TACKIFIER MAY BE SUBSTITUTED ON SLOPES STEEPER THAN 3:1 OR ON OTHER AREAS NOT PRACTICAL TO DRILL SEED.
   - SEEDING RATES MUST BE DOUBLED FOR BROADCAST SEEDING OR INCREASED BY 50% IF USING A BRILLION DRILL OR HYDRO–SEEDING
   - BROADCAST SEEDING MUST BE LIGHTLY HAND–RAKED INTO THE SOIL
4. THE CONTRACTOR SHALL CONFIRM WHICH SEED MIX TO USE WITH THE COUTNY PRIOR TO ORDERING OR ANY APPLICATION.

MULCHING

1. MULCHING SHOULD BE COMPLETED AS SOON AS PRACTICABLE AFTER SEEDING, HOWEVER PLANTED AREAS MUST BE MULCHED NO LATER THAN 14 DAYS AFTER PLANTING.
2. MULCHING REQUIREMENTS INCLUDE:
   - HAY OR STRAW MULCH
     - ONLY CERTIFIED WEED–FREE AND CERTIFIED SEED–FREE MULCH MAY BE USED. MULCH MUST BE APPLIED AT 2 TONS/ACRE AND ADEQUATELY SECURED BY CRIMPING AND/OR TACKIFIER.
     - CRIMPING MUST NOT BE USED ON SLOPES GREATER THAN 3:1 AND MULCH FIBERS MUST BE TUCKED INTO THE SOIL TO A DEPTH OF 3 TO 4 INCHES.
     - TACKIFIER MUST BE USED IN PLACE OF CRIMPING ON SLOPES STEEPER THAN 3:1.
   - HYDRAULIC MULCHING
     - HYDRAULIC MULCHING IS AN OPTION ON STEEP SLOPES OR WHERE ACCESS IS LIMITED.
     - IF HYDRO–SEEDING IS USED, MULCHING MUST BE APPLIED AS A SEPARATE, SECOND OPERATION.
     - WOOD CELLULOSE FIBERS MIXED WITH WATER MUST BE APPLIED AT A RATE OF 2,000 TO 2,500 POUNDS/ACRE, AND TACKIFIER MUST BE APPLIED AT A RATE OF 100 POUNDS/ACRE.
   - EROSION CONTROL BLANKET
     - EROSION CONTROL BLANKET MAY BE USED IN PLACE OF TRADITIONAL MULCHING METHODS.

SM

STORMWATER ENTERPRISE | SEEDING & MULCHING

APPROVED: SWENT MANAGER

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| 10/7/19 | 8/19/2020 | 900–SM |

( MODIFIED AUGUST 2022)



**Table 5-1. El Paso County Conservation District All-Purpose Mix for Upland, Transition and Permanent Control Measure Areas**

| Common Name | Scientific Name | Growth Season / Form | % of Mix | Pounds PLS | | |
|---|---|---|---|---|---|---|
| | | | | • Irrigated broadcast • Irrigated hydroseeded | • Non-irrigated broadcast • Non-irrigated hydroseeded • Irrigated drilled | • Non-irrigated drilled |
| | | | | 80 seeds/sq ft | 40 seeds/sq ft | 20 seeds/sq ft |
| Bluestem, big | *Andropogon gerardii* | Warm, sod | 20 | 4.4 | 2.2 | 1.1 |
| Grama, blue | *Bouteloua gracilis* | Warm, bunch | 10 | 0.5 | 0.25 | 0.13 |
| Green needlegrass[2] | *Nassella viridula* | Cool, bunch | 10 | 2 | 1 | 0.5 |
| Wheatgrass, western[2] | *Pascopyrum smithii* | Cool, sod | 20 | 6.4 | 3.2 | 1.6 |
| Grama, sideoats | *Bouteloua curtipendula* | Warm, bunch | 10 | 2 | 1 | 0.5 |
| Switchgrass[2] | *Panicum virgatum* | Warm, bunch/sod | 10 | 0.8 | 0.4 | 0.2 |
| Prairie sandreed | *Calimovilfa longifolia* | Warm, sod | 10 | 1.2 | 0.6 | 0.3 |
| Yellow indiangrass[2] | *Sorghastrum nutans* | Warm, sod | 10 | 2 | 1 | 0.5 |
| | | | Seed rate (lbs PLS/acre) | 19.3 | 9.7 | 4.8 |

[1]For portions of facilities located near or on the bottom or where wet soil conditions occur. Planting of potted nursery stock wetland plants 2-foot on-center is recommended for sites with wetland hydrology.

[2]Species that will do well in the bottom of pond areas.





**Table 5-2. El Paso County All-Purpose Low Grow Mix for Upland and Transition Areas**

| Common Name | Scientific Name | Growth Season / Form | % of Mix | Pounds PLS | | |
|---|---|---|---|---|---|---|
| | | | | • Irrigated broadcast • Irrigated hydroseeded | • Non-irrigated broadcast • Non-irrigated hydroseeded • Irrigated drilled | • Non-irrigated drilled |
| | | | | 80 seeds/sq ft | 40 seeds/sq ft | 20 seeds/sq ft |
| Buffalograss | *Buchloe dactyloides* | Warm, sod | 25 | 9.6 | 4.8 | 2.4 |
| Grama, blue | *Bouteloua gracilis* | Warm, bunch | 20 | 10.8 | 5.4 | 2.7 |
| Grama, sideoats | *Bouteloua curtipendula* | Warm, bunch | 29 | 5.6 | 2.8 | 1.4 |
| Green needlegrass | *Nassella viridula* | Cool, bunch | 5 | 3.2 | 1.6 | 0.8 |
| Wheatgrass, western | *Pascopyrum smithii* | Cool, sod | 20 | 12 | 6 | 3 |
| Dropseed, sand | *Sporobolus cryptandrus* | Warm, bunch | 1 | 0.8 | 0.4 | 0.2 |
| | | | Seed rate (lbs PLS/acre) | 42 | 21 | 10.3 |



# Wind Erosion/Dust Control (DC) EC-14

## Description

Wind erosion and dust control BMPs help to keep soil particles from entering the air as a result of land disturbing construction activities. These BMPs include a variety of practices generally focused on either graded disturbed areas or construction roadways. For graded areas, practices such as seeding and mulching, use of soil binders, site watering, or other practices that provide prompt surface cover should be used. For construction roadways, road watering and stabilized surfaces should be considered.

**Photograph DC-1.** Water truck used for dust suppression. Photo courtesy of Douglas County.

## Appropriate Uses

Dust control measures should be used on any site where dust poses a problem to air quality. Dust control is important to control for the health of construction workers and surrounding waterbodies.

## Design and Installation

The following construction BMPs can be used for dust control:

- An irrigation/sprinkler system can be used to wet the top layer of disturbed soil to help keep dry soil particles from becoming airborne.
- Seeding and mulching can be used to stabilize disturbed surfaces and reduce dust emissions.
- Protecting existing vegetation can help to slow wind velocities across the ground surface, thereby limiting the likelihood of soil particles to become airborne.
- Spray-on soil binders form a bond between soil particles keeping them grounded. Chemical treatments may require additional permitting requirements. Potential impacts to surrounding waterways and habitat must be considered prior to use.
- Placing rock on construction roadways and entrances will help keep dust to a minimum across the construction site.
- Wind fences can be installed on site to reduce wind speeds. Install fences perpendicular to the prevailing wind direction for maximum effectiveness.

**Wind Erosion Control/ Dust Control**

| Functions | |
|---|---|
| Erosion Control | Yes |
| Sediment Control | No |
| Site/Material Management | Moderate |

## Maintenance and Removal

When using an irrigation/sprinkler control system to aid in dust control, be careful not to overwater. Overwatering will cause construction vehicles to track mud off-site.



# Street Sweeping and Vacuuming (SS) SM-7

## Description

Street sweeping and vacuuming remove sediment that has been tracked onto roadways to reduce sediment transport into storm drain systems or a surface waterway.

## Appropriate Uses

Use this practice at construction sites where vehicles may track sediment offsite onto paved roadways.

**Photograph SS-1.** A street sweeper removes sediment and potential pollutants along the curb line at a construction site. Photo courtesy of Tom Gore.

## Design and Installation

Street sweeping or vacuuming should be conducted when there is noticeable sediment accumulation on roadways adjacent to the construction site. Typically, this will be concentrated at the entrance/exit to the construction site. Well-maintained stabilized construction entrances, vehicle tracking controls and tire wash facilities can help reduce the necessary frequency of street sweeping and vacuuming.

On smaller construction sites, street sweeping can be conducted manually using a shovel and broom. Never wash accumulated sediment on roadways into storm drains.

## Maintenance and Removal

- Inspect paved roads around the perimeter of the construction site on a daily basis and more frequently, as needed. Remove accumulated sediment, as needed.
- Following street sweeping, check inlet protection that may have been displaced during street sweeping.
- Inspect area to be swept for materials that may be hazardous prior to beginning sweeping operations.

**Street Sweeping/ Vacuuming**

| Functions | |
|---|---|
| Erosion Control | No |
| Sediment Control | Yes |
| Site/Material Management | Yes |



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FOR & ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC

COLORADO REGISTERED JAY M. NEWELL 35219 PROFESSIONAL ENGINEER
8 / 10 / 22

STERLING DESIGN ASSOCIATES, LLC

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NO.: 2 DATE: - BY: -
DESCRIPTION: -
NO.: 3 DATE: - BY: -
DESCRIPTION: -
NO.: 4 DATE: - BY: -
DESCRIPTION: -
NO.: 5 DATE: - BY: -
DESCRIPTION: -
NO.: 6 DATE: - BY: -
DESCRIPTION: -

DATE: 08/2022
SCALE: N/A
PROJECT MANAGER: JS
PROJECT NO.:
DRAWN BY: JN
DRAWING FILE:

PROJECT:

**SPACE VILLAGE FILING NO. 4**
**EL PASO COUNTY, CO**

CLIENT:

COMMERCIAL BUILDING SERVICES
7561 S. GRANT STR., SUITE A-4
LITTLETON, COLORADO 80122

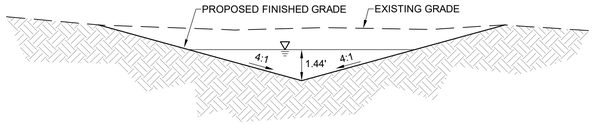
TEL: (303) 730-3001

SHEET TITLE:

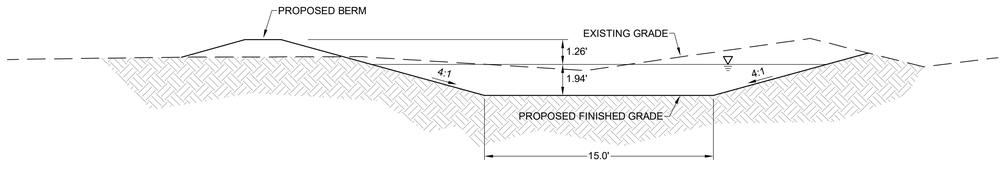
**GRADING & EROSION CONTROL DETAILS (SWMP-SITE MAP)**

SHEET NUMBER:

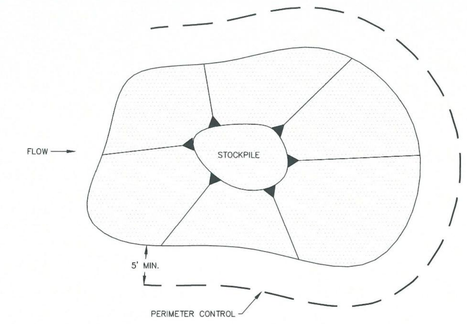
**6** **C912**



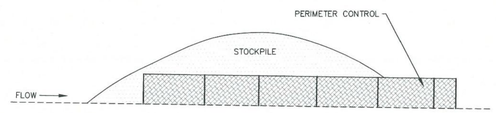

DIVERSION SWALE (A)
NOT TO SCALE




DIVERSION CHANNEL (B)
NOT TO SCALE




STOCKPILE PROTECTION PLAN




STOCKPILE PROTECTION ELEVATION

INSTALLATION NOTES:
1. INSTALL PERIMETER CONTROL AROUND STOCKPILE ON DOWNGRADIENT SIDE. PERIMETER CONTROL MUST BE SUITABLE TO SITE CONDITIONS AND INSTALLED ACCORDING TO THE RELEVANT DETAIL.
2. FOR STOCKPILES ON THE INTERIOR PORTION OF A CONSTRUCTION SITE, WHERE OTHER DOWNGRADIENT CONTROLS INCLUDING PERIMETER CONTROL ARE IN PLACE, STOCKPILE PERIMETER CONTROLS MAY NOT BE REQUIRED.

MAINTENANCE NOTES:
1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. IF PERIMETER CONTROLS MUST BE MOVED TO ACCESS STOCKPILE, REPLACE PERIMETER CONTROLS BY THE END OF THE WORK DAY.
3. ACCUMULATED SEDIMENT MUST BE REMOVED ACCORDING TO PERIMETER CONTROL DETAIL.

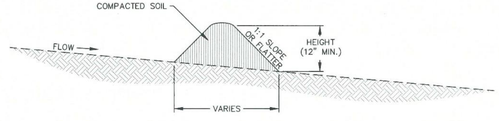
SP

STORMWATER ENTERPRISE

STOCKPILE PROTECTION

APPROVED: SWENT MANAGER

| ISSUED: | REVISED: | DRAWING NO. |
|---|---|---|
| 10/7/19 | 8/19/2020 | 900-SP |




TEMPORARY COMPACTED BERM

INSTALLATION NOTES:
1. COMPACTED BERM MUST BE A MINIMUM HEIGHT OF ONE FOOT. BASE WIDTH IS DETERMINED BY HEIGHT.
2. COMPACTED BERMS MUST BE ADEQUATELY COMPACTED. NOT ALL SOILS ARE SUITABLE FOR COMPACTED BERMS.
3. INSTALL COMPACTED BERMS ALONG CONTOUR; DO NOT INSTALL PERPENDICULAR TO SLOPE.
4. THE MAXIMUM TRIBUTARY DRAINAGE AREA PER 100 LINEAR FEET OF COMPACTED BERMS SHALL BE ¼ ACRE.

MAINTENANCE NOTES:
1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES ½ OF THE DESIGN DEPTH OF THE BERM.

TCB

STORMWATER ENTERPRISE

TEMPORARY COMPACTED BERM

APPROVED: SWENT MANAGER

| ISSUED: | REVISED: | DRAWING NO. |
|---|---|---|
| 10/7/19 | 8/19/2020 | 900-TCB |

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TEL: (303) 730-3001

SHEET TITLE:

**GRADING & EROSION CONTROL DETAILS (SWMP-SITE MAP)**

SHEET NUMBER:

**7** **C913**

3275 Akers Drive
Colorado Springs, CO 80922
Phone 719-520-6460
Fax 719-520-6879
www.elpasoco.com

Y - Satisfies criteria

N - Needs to be addressed

# EL PASO COUNTY
# STORMWATER MANAGEMENT PLAN CHECKLIST

EPC Project Number: MS227 Revised.

Revised: October 2021

| | | Applicant | EPC |
|---|---|---|---|
| **1. STORMWATER MANAGEMENT PLAN** (in the "Applicant" column specify the page number for each item) | | | |
| 1 | Applicant (owner/designated operator), SWMP Preparer, Qualified Stormwater Manager, and Contractor Information. (On cover/title sheet) Revised. | | N |
| 2 | Table of Contents | | Y |
| 3 | Site description and location to include: vicinity map with nearest street/crossroads description | | Y |
| 4 | Narrative description of construction activities proposed (e.g., may include clearing and grubbing, temporary stabilization, road grading, utility / storm installation, final grading, final stabilization, and removal of temporary control measures) | | Y |
| 5 | Phasing plan – may require separate drawings indicating initial, interim, and final site phases for larger projects. Provide "living maps" that can be revised in the field as conditions dictate | | Y |
| 6 | Proposed sequence for major activities: Provide a construction schedule of anticipated starting and completion dates for each stage of land-disturbing activity depicting conservation measures anticipated, including the expected date on which the final stabilization will be completed | | Y |
| 7 | Estimates of the total site area and area to undergo disturbance; current area of disturbance must be updated on the SWMP as changes occur | | Y |
| 8 | Soil erosion potential and impacts on discharge that includes a summary of the data used to determine soil erosion potential | | Y |
| 9 | A description of existing vegetation at the site and percent ground cover and method used to determine ground cover | | Y |
| 10 | Location and description of all potential pollution sources including but not limited to: disturbed and stored soils; vehicle tracking; management of contaminated soils; loading and unloading operations; outdoor storage of materials; vehicle and equipment maintenance and fueling; significant dust generating process; routine maintenance activities involving fertilizers, pesticides, herbicides, detergents, fuels, solvents, oils, etc.; on-site waste management; concrete truck/equipment washing; dedicated asphalt, concrete batch plants and masonry mixing stations; non-industrial waste such as trash and portable toilets | | Y |
| 11 | Material handling to include spill prevention and response plan and procedures | | Y |
| 12 | Spill prevention and pollution controls for dedicated batch plants | | Y |
| 13 | Other SW pollutant control measures to include waste disposal and off-site soil tracking | | Y |
| 14 | Location and description of any anticipated allowable non-stormwater discharge (ground water, springs, irrigation, discharge covered by CDPHE Low Risk Guidance, etc.) | | Y |
| 15 | Name(s) of ultimate receiving waters; size, type and location of stormwater outfall or storm sewer system discharge | | Y |
| 16 | Description of all stream crossings located within the project area or statement that no streams cross the project area | | Y |

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# EL PASO COUNTY
# STORMWATER MANAGEMENT PLAN CHECKLIST

EPC Project Number:

Revised: October 2021

| | | Applicant | EPC |
|---|---|---|---|
| 17 | SWMP Map to include: | | |
| 17a | construction site boundaries | | Y |
| 17b | flow arrows to depict stormwater flow directions | | Y |
| 17c | all areas of disturbance | | N |
| 17d | areas of cut and fill Revised. | | Y |
| 17e | areas used for storage of building materials, soils (stockpiles) or wastes | | Y |
| 17f | location of any dedicated asphalt / concrete batch plants | | Y |
| 17g | location of all structural control measures | | Y |
| 17h | location of all non-structural control measures | | Y |
| 17i | springs, streams, wetlands and other surface waters, including areas that require maintenance of pre-existing vegetation within 50 feet of a receiving water | | Y |
| 18 | Narrative description of all structural control measures to be used. Modifications to EPC standard control measures must meet or exceed County-approved details | | Y |
| 19 | Description of all non-structural control measures to be used including seeding, mulching, protection of existing vegetation, site watering, sod placement, etc. | | Y |
| 20 | Technical drawing details for all control measure installation and maintenance; custom or other jurisdiction's details used must meet or exceed EPC standards | | Y |
| 21 | Procedure describing how the SWMP is to be revised | | Y |
| 22 | Description of Final Stabilization and Long-term Stormwater Quality (describe nonstructural and structural measures to control SW pollutants after construction operations have been completed, including detention, water quality control measure etc.) | | Y |
| 23 | Specification that final vegetative cover density is to be 70% of pre-disturbed levels | | Y |
| 24 | Outline of permit holder inspection procedures to install, maintain, and effectively operate control measures to manage erosion and sediment | | Y |
| 25 | Record keeping procedures identified to include signature on inspection logs and location of SWMP records on-site | | Y |
| 26 | If this project relies on control measures owned or operated by another entity, a documented agreement must be included in the SWMP that identifies location, installation and design specifications, and maintenance requirements and responsibility of the control measure(s) | | Y |
| | **Please note: all items above must be addressed. If not applicable, explain why, simply identifying "not applicable" will not satisfy CDPHE requirement of explanation.** | | |
| **2.** | **ADDITIONAL REPORTS/PERMITS/DOCUMENTS** | | |
| a | Grading and Erosion Control Plan (signed) | | |
| b | Erosion and Stormwater Quality Control Permit (ESQCP) (signed) | | |

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# EL PASO COUNTY
# STORMWATER MANAGEMENT PLAN CHECKLIST

EPC Project Number:

Revised: October 2021

| | | Applicant | EPC |
|---|---|---|---|
| **3. APPLICANT COMMENTS** | | | |
| a | | | |
| b | | | |
| c | | | |
| **4. CHECKLIST REVIEW CERTIFICATIONS** | | | |
| a | Applicant:<br>The Stormwater Management Plan was prepared under my direction and supervision and is correct to the best of my knowledge and belief. Said Plan has been prepared according to the criteria established by the County and State for Stormwater Management Plans.<br><br>_____ _____<br>Engineer of Record and/or Qualified Stormwater Manager Signature — Date | | Y |
| b | Review Engineer:<br>The Stormwater Management Plan was reviewed and found to meet the checklist requirements except where otherwise noted or allowed by an approved deviation request.<br><br>_____ _____<br>Review Engineer — Date | | |

# Post Construction Stormwater Management Applicability E

Revised to "Y". Remainder of Form filled out accordingly.

Please revise to "Y". The northwest section of the property is in the MS4 Permit Area.

This form is to be used by the Engineer of Record to evaluate applicable construction
the activities are eligible for an exclusion to permanent stormwater quality managen
Additionally Part III of the form is used to identify and document which allowable co
standard is used for the structure.

| **Part I. Project Information** | |
|---|---|
| **1. Project Name:** | |
| **2. El Paso County Project #:** | **3. ESQCP #:** |
| **4. Project Location:** | **Project Location in MS4 Permit Area (Y or N):** |
| **5. Project Description:** | |
| If project is located within the El Paso County MS4 Permit Area, please provide copy of this completed form to the Stormwater Quality Coordinator for reporting purposes; and save completed form with project file. | |

**Part II. Exclusion Evaluation:** Determine if Post-Construction Stormwater Management exclusion criteria are met. Note: Questions A thru K directly correlate to the MS4 permit Part I.E.4.a.i (A) thru (K). If Yes, to any of the following questions, then mark Not Applicable in Part III, Question 2.

| Questions | Yes | No | Not Applicable | Notes: |
|---|---|---|---|---|
| A. Is this project a "Pavement Management Site" as defined in Permit Part I E.4.a.i.(A)? | | | | This exclusion applies to "roadways" only. Areas used primarily for parking or access to parking are not included. |
| B. Is the project "Excluded Roadway Development"? | | | | |
| • Does the site add less than 1 acre of paved area per mile? | | | | |
| • Does the site add 8.25 feet or less of paved width at any location to the existing roadway? | | | | |
| C. Does the project increase the width of the existing roadway by less than 2 times the existing width? | | | | For redevelopment of existing roadways, only the area of the existing roadway is excluded from post-construction requirements when the site does not increase the width by two times or more. ***This exclusion only excludes the original roadway area it does NOT apply to entire project.*** |
| D. Is the project considered an aboveground and Underground Utilities activity? | | | | Activity can NOT permanently alter the terrain, ground cover or drainage patterns from those present prior to the activity |
| E. Is the project considered a "Large Lot Single-Family Site"? | | | | Must be a single-residential lot or agricultural zoned land, ≥ 2.5 acres per dwelling and total lot impervious area < 10 percent. |

| Questions (cont'd) | Yes | No | Not Applicable | Notes |
|---|---|---|---|---|
| F. Do Non-Residential or Non-Commercial Infiltration Conditions exist?<br>Post-development surface conditions do not result in concentrated stormwater flow or surface water discharge during an 80th percentile stormwater runoff event. | | | | Exclusion does not apply to residential or commercial sites for buildings.<br>A site specific study is required and must show: rainfall and soil conditions; allowable slopes; surface conditions; and ratios of imperviousness area to pervious area. |
| G. Is the project land disturbance to Undeveloped Land where undeveloped land remains undeveloped following the activity? | | | | Project must be on land with no human made structures such as buildings or pavement. |
| H. Is the project a Stream Stabilization Site? | | | | Standalone stream stabilization projects are excluded. |
| I. Is the project a bike or pedestrian trail? | | | | Bike lanes for roadways are not included in this exclusion, but may qualify if part of larger roadway activity is excluded in A, B or C above. |
| J. Is the project Oil and Gas Exploration? | | | | Activities and facilities associated with oil and gas exploration are excluded. |
| K. Is the project in a County Growth Area? | | | | Note, El Paso County does not apply this exclusion.<br>All Applicable Construction Activity in El Paso County must comply the Post-Construction Stormwater Management criteria. |

| Part III. Post Construction (Permanent) Stormwater Control Determination | | |
|---|---|---|
| **Questions** | **Yes** | **No** |
| 1. Is project an Applicable Construction Activity? | | |
| 2. Do any of the Exclusions (A-K in Part II) apply? | | |
| If the project is an Applicable Construction Activity and no Exclusions apply then Post-Construction (Permanent) Stormwater Management is required.<br>Complete the applicable sections of Part IV below and then coordinate signatures for form and place in project file.<br>If the project is not an Applicable Construction Activity, or Exclusion(s) apply then Post-Construction (Permanent) Stormwater Management is NOT required. Coordinate signatures for form and place in project file. | | |

| Part IV: Onsite PWQ Requirements, Documentation and Considerations | Yes | No |
|---|---|---|
| 1. Check which Design Standard(s) the project will utilize. Standards align with Control Measure Requirements identified in permit Part I.E.4.a.iv. | | |
| A. Water Quality Capture Volume (WQCV) Standard | | |
| B. Pollutant Removal/80% Total Suspended Solids Removal (TSS) | | |
| C. Runoff Reduction Standard | | |
| D. Applicable Development Site Draining to a Regional WQCV Control Measure | | |
| E. Applicable Development Site Draining to a Regional WQCV Facility | | |
| F. Constrained Redevelopment Sites Standard | | |
| G. Previous Permit Term Standard | | |
| 2. Will any of the project permanent stormwater control measure(s) be maintained by another MS4?<br>If Yes, you must obtain a structure specific maintenance agreement with the other MS4 prior to advertisement. | | |
| 3. Will any of the project permanent stormwater control measures be maintained by a private entity or quasi-governmental agency (e.g. HOA or Special District, respectively)?<br>If Yes, a Private Detention Basin/Stormwater Quality Best Management Practice Maintenance Agreement and Easement must be recorded with the El Paso County Clerk and Recorder. | | |

| Part V Notes (attach an additional sheet if you need more space) |
|---|
| |

Project design is complete to include the project design, construction plans, drainage report, specifications, and maintenance and access agreements as required. The engineering, drainage considerations and information used to complete these documents is complete, true, and accurate to the best of my belief and knowledge.

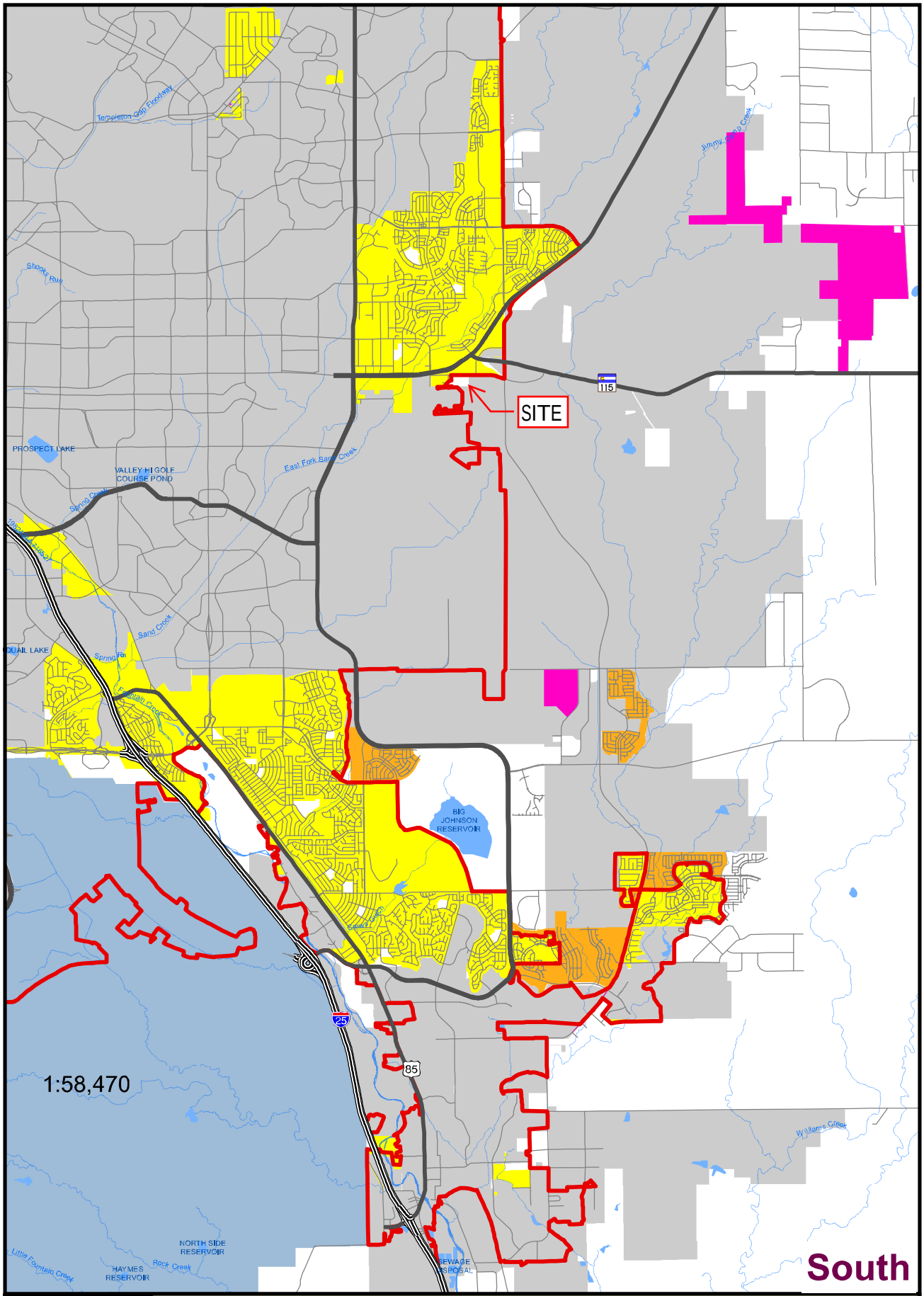
Signature and Stamp of Engineer of Record

Date

Post-Construction Stormwater Management Applicability Form has been reviewed and the project design, construction plans, drainage report, specifications, and maintenance and access agreements as required, have been reviewed for compliance with the Post Construction Stormwater Management process and MS4 Permit requirements.

Signature of El Paso County Project Engineer

Date




## 2022 El Paso County MS4 Permit Area - Urban Areas
## CDPS Stormwater Management Program
## CDPS Permit No. COR-090011

**Legend**

- 2022 Existing MS4 Permit Area
- 2020 County Growth Areas
- 2010 Census Urban Area
- Incorporated Areas
- 2021 Incorp Area Changes

**URBAN AREA**
**South Map**

REVISED DUE TO ANNEXATIONS THRU DECEMBER 2021

Program area boundary based on 2010 Census Urbanized Areas from U.S. Census Bureau cartographic products online. Adjustments to fit El Paso County basemap coordinates and judgments on excluding small low density areas were made by El Paso County Staff.

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no comments from planning

Noted.

Please update to "Final Drainage Report". The report will be required to meet criteria for a final drainage report listed in the El Paso County's DCM Vol. 1 Section 1 Chapter 4.4

Revised.

# PRLIMINARY DRAINAGE REPORT

# FIRST WING SUBDIVISION, FILING NO. 2

## 0 SPACE VILLAGE AVENUE

## COLORADO SPRINGS, COLORADO

PREPARED FOR:

COMMERCIAL BUILDING SERVICES
7561 S. GRANT STREET, SUITE A-4
LITTLETON, COLORADO 80122
CONTACT: DAVID SPRATLEN
PHONE: 303.730.3001

PREPARED BY:

STERLING DESIGN ASSOCIATES, LLC
2009 W. LITTLETON BLVD. #300
LITTLETON, CO 80120
PH. 303.794.4727
CONTACT: JON SPENCER

Please add "PCD File No. MS-22-007".

Added.

MAY 5, 2022

Sterling Design Associates, llc
CIVIL ENGINEERS - LANDSCAPE ARCHITECTS

## ENGINEER CERTIFICATION

This report for the preliminary design of First Wing Subdivision Filing No. 2 was prepared by me (or under my direct supervision) in accordance with the provisions of the El Paso County *Drainage Criteria Manual* and the Colorado Springs' *Drainage Design and Technical Criteria Manual* for the owners thereof. I understand that El Paso County and the City of Colorado Springs do not and will not assume liability for drainage facilities designed by others.

By: _____
Licensed Professional Engineer
State of Colorado
No. _____

Please revise drainage report certification page using the attached word document for the design engineer, owner/developer, and El Paso County signature blocks.

Revised.

Sterling Design Associates, llc
CIVIL ENGINEERS - LANDSCAPE ARCHITECTS

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# 1) GENERAL LOCATION AND DESCRIPTION

## A) LOCATION

1. CITY AND COUNTY, AND LOCAL STREETS

   The subject development is in unincorporated El Paso County; though it is addressed by the USPS to Colorado Springs. The Space Village Avenue right-of-way is immediate to the north property line. Intersection with Peterson Road is one-quarter mile to the west while the Marksheffel Road intersection is a half mile to the east.

2. TOWNSHIP, RANGE, SECTION, 1/4 SECTION

   First Wing Subdivision Filing No. 2 is a parcel of land is situated in the Northwest 1/4 of Section 17, Township 14 South, Range 65 West of the 6th Principal Meridian, in El Paso County, Colorado.

   VICINITY MAP

3. MAJOR DRAINAGEWAYS AND EXISTING FACILITIES

   No major drainageways exist either on or immediately adjacent to the site.

4. SURROUNDING DEVELOPMENTS

   The property to the west is, except for a partial access road, the undeveloped commercial Lot 1, Cowperwood SAIC. To the south is Peterson Air Force Base. To the east is open space belonging to the City of Colorado Springs. Several commercial developments, primarily storage facilities, exist north of the adjacent Space Village Avenue ROW including the Eastgate Business Park and Front Range Winwater Works.

## B) DESCRIPTION OF PROPERTY

### 1. AREA AND EXISTING CONDITIONS

The terrain within the 22.80 acre site generally falls north to south at 2 to 4.5 percent grades. The east half of the site is covered with native grasses and a handful of widely spaced trees. The west half is being used as an impromptu storage yard and is largely denuded of significant vegetation.

### 2. GENERAL SOIL CONDITION

The Web Soil Survey referenced for this Lot indicate a Blakeland loamy sand subgrade with a hydrologic soil group A rating. Where native grasslands remain, the soil is suspected to be in good condition and remain highly porous. In areas being used for storage there is evidenced loss of infiltration due to compaction by vehicle loading.

### 3. ENCUMBRANCES

A duel 30-inch CMP culvert under Space Village Avenue discharges onto the property approximately 260 feet from the east property line. It appears there is an off-site basin of approximately 53 acres contributing to this facility. There is a low area on site where, it is assumed, most runoff events have sat and infiltrated as there is no evidence of a low flow channel or rill that would be caused by frequent subjection to flowing water.

There are two 30-foot utility easements on the property adjacent to Space Village Avenue. The north most contains an 8-inch sanitary sewer main belonging to the Cherokee Metropolitan District. The southern one contains a 48-inch steel water line belonging to Colorado Springs Utilities. There are no irrigation facilities on-site that we are aware of. These utilities and their easements are not expected to be disturbed or displaced by the proposed development.

## 2) DRAINAGE BASINS AND SUB-BASINS

Please revise description. The property is located in the Peterson Field Drainage Basin.

### A) MAJOR BASIN DESCRIPTIONS

The site is in the Sand Creek Basin and is a part o[illegible] these studies the area of this development is in the far upper reaches of the basin and there are no identifications of existing deficiency or proposed improvements within the property boundary or immediate thereto.

Revised in Section 2.A.1.

Likely due to the highly pervious soils there is no indication of continuous storm runoff flows either in low flow channels or rill on the site. Existing discharge of runoff from the site is either into the ground or as sheet flow onto Peterson AFB. The site is identified as Zone X, area of minimal flood hazard, by the El Paso County FIRM 08041C0754G with an effective date of 12/7/2018. No irrigation facilities are expected to be impacted by runoff from the proposed development.

It is intended that the 22.80 acre site be re-purposed as an outdoor storage yard. Ultimate tenants and internal circulation geometry is not known at this time.

Revised in Section 2.B.1.

As part of the sub-basin description please include the total flow rates for each basin and the amount of runoff flowing through.

## B) Sub-Basin Descriptions

### 1. Historic Drainage Pattern

There are two distinct low points and a ridge that generally divide the site into an east (Basin A) and west (Basin B) half for drainage consideration. Grades within both direct any excess rainfall runoff to the south and onto Peterson AFB. Lack of evidence of past erosion or channel formation indicates this has been accomplished primarily as sheet flow up to now.

The drainage map showing existing conditions labels these basins as H1 and H2.

### 2. Off-Site Drainage

Please revise basin names to match basin IDs shown on the drainage maps.

Revised in Section 2.B.1.

The large open space on the property [illegible] Space Village Avenue contribute will become a part of the proposed storage yard. As such, it will become necessary to pass this flow through, in a channel section, to Peterson AFB. There is a second area, approximately 6.8 acres, north of Space Village Avenue and west of the larger basin described above, that could contribute discharge over the road and onto the western property boundary in very large rain events. There is no evidence this has occurred, but there is no apparent means for water accumulating at that location to discharge other than into the ground or over the road and onto the site. A perimeter swale can easily provide for conveyance of flows, in this eventuality, south onto Peterson.

Revised in Section 2.B.1.

The existing conditions drainage map identifies off-site basins OS-W and OS-E. Please include these in the sub-basin breakdown. Include the total flow rate, five and 100 year flow rates and runoff pattern descriptions.

# 3) DRAINAGE DESIGN CRITERIA

## A) Development Criteria Reference

Revised in Section 2.B.2.

### 1. Criteria, Master Plans, and Technical Info

This report references the El Paso County *Drainage Criteria Manual*, the City of Colorado Springs *Drainage Criteria Manual*, and Volumes I and II of the Mile High Flood District Drainage Criteria Manual for the needed technical information to make estimation of rate and volumetric stormwater considerations presented herein.

As mentioned previously, the area of proposed development is a part of the upper reaches of planning areas presented in the *Peterson Field Drainage Basin Master Plan* (August, 1984) and the *Sand Creek Drainage Basin Planning Study – Final Report* (January, 2021). Neither report particularly addresses the area in question or describes any problems or drainage improvements that may be associated with it. However, the Sand Creek study does graphically show the property as "open space / cemetery" in its future condition mapping; a designation not supported by the El Paso County Zoning Map or the Colorado Springs Comprehensive Plan.

### 2. Prior Studies

The area of the proposed development was, most recently, included in the Preliminary Drainage Report for First Wing Development (July, 2005). In that report the subject is referenced as being Filing No. 2 of the First Wing Development. It is described as existing Basin EX-3 and proposed Basin E and is summarized as having an allowed, detained 100-year release onto Peterson AFB of 36 cfs. Two minor basins, OS-3 and OS-4, are shown to contribute to the site from areas of Space Village Avenue south of the road center, only. However, the two aforementioned 30-inch culverts under Space Village Avenue route runoff from a considerably larger area onto the site. It is not known whether this was the case at the time that PDR was developed or occurred subsequent thereto.

A second reference study, presented in letter format as made available, addresses the Highway 24 Eastgate Business Park (December, 2011) north of Space Village Avenue. This is pertinent only in that it demonstrates the twin 30-inch culverts under the avenue and the business parks' discharge ($Q_{100}$=20.9 cfs, post detention) thereto. There is no further quantification of upstream flows to the culverts or addressing of the discharge condition downstream of Space Village Avenue.

### B) HYDROLOGIC CRITERIA

On- and off-site basin runoff was determined through the use of the rational formula for the 5- and 100-year recurrence interval storms. Intensities for which were taken from Figure 6-5 of the Colorado Springs DCM. Intensities for detention sizing were excerpted from NOAA Atlas 14 as available through their website. Detention sizing was estimated using the design tool MHFD-Detention_v4.03.xlsm, an Excel worksheet publishe

Described in section 4.B.2 and 4.B.4 of revised report.

## 4) DRAINAGE FACILITY DESIGN

Please include a narrative on the proposed detention facilities in the proposed sub-basin description.

### A) GENERAL CONCEPT

Site drainage patterns are not anticipated to change with development as a storage yard. Runoff will be routed overland to perimeter berms and swales which will direct excess rainfall to one of two proposed detention and water quality facilities. Treated and mitigated runoff will then be directed onto Peterson Air Force Base at the low points along the south property line.

Off-site drainage coming into the site from the north will be intercepted in a grass lined channel (east) or swales (west) which will route those flows to the south property line. The larger, channel, will confluence with other off-site flows from further east at the southeast property corner. Water in the swale will combine with discharge from the east pond facility before exiting onto the AFB.

2022 Drainage Basin fee is $15,243 per impervious acre and $1,156 per impervious acre for the bridge fee

https://assets-planningdevelopment.elpasoco.com/wp-content/uploads/2022-DFees-with-resolution-number-1.pdf

Also refer to ECM Appendix L table 3-1. As site development is not known at this time use 85% impervious for fee calc.

The channel is directing concentrated flow to the southerly lot which will negatively impact the southerly lot. How will this impact be mitigated? Additionally, this channelized flow does not match historic conditions. please address.

### B) SPECIFIC DETAILS

On- and off-site basin delineations and flow maps and calculations are included in the attached appendices. At the time of preparation of this report there are no detailed plans for the proposed improvements as those will be predicated on end users which have not been established. Water quality and detention pond placement is expected within the indicated envelopes which will dimensionally conform to the preliminary sizing provided by the MHFG-Detention worksheet.

It is estimated that it will require a 10' flat bottom channel flowing at approximately 2' depth to convey o rade on the east side of the site. Similarly, er a foot of depth will suffice on the west side for flows that may originate is OS-W. Flow velocities in both are coming in at 3.25 cfs for the channel and 2.85 fps for the swale. It is expected that these grades will be reduced to produce non-erosive velocities on average either through armore r with drop structures.

Addressed at various points in the revised report. Specifically within section 4.B.4.

Please identify what is required/proposed for the swale/channel.

Addressed in section 4.B.4 of the revised report. Proposed design does not require armored sections nor drop structures to attain non-erosive velocities.

The existing and pro d to coincide. However, there will necessarily be some namely in concentration, duration, and, for larger events, total volume. We have reached out to the Bases' Engineering Staff for coordination and determination of what can be accommodated by the existing infrastructure on Peterson and what, if anything, will need to be improved. Results of the discussions and any subsequent design will be included in updates.

Included.

Addressed in section 4.B.4 of the revised report.

- Please include a cost breakdown for drainage basin fees owed by the developer at the time of plat.
- Please include the engineer's estimate for the total cost of detention and water quality facilities and provide a breakdown of the cost.

Address with this report. Suitable outfalls (ECM3.2.4) for the sites developed flows must be provided.

Please compare the historic flows to the proposed developed condition flows. Are the developed flows at or below historic as required? Do the proposed full spectrum detention/water quality ponds meet the drainage time requirements (senate bill 15-212)? etc.
Provide a conclusions section. Confirm whether or not the developed flows will adversely affect the downstream or surrounding properties.

evaluate the 4 step process per ECM appendix I.7.2

Addressed in section 4.B.2 of the revised report.

Section 4.B.1 of the revised report includes a table (Table 1) comparing historic and developed flows. Historic flows are the same or reduced in the developed condition.

The standard form for indicating compliance with Senate Bill 15-212 is included in the appendices of the revised report.

A conclusions section has been added.

5) LIST O

1. El Pas gh MuniCode and created (e-published) on Ju
2. City c 2014, as Revised January 2021.
3. Volum lood Control District, November 2010 with s
4. Peters dated September 28, 1984.
5. Sand C red by Stantec and HDR Dewberry and dated
6. Prelim Engineering, Revised July 2005.
7. Adden ark by Oliver E. Watts, Consulting Engineer, Inc. and revised December 3, 2011.
8. Soil Map-El Paso County Area, Colorado, as available on the Web Soil Survey National Cooperative Soil Survey mapping tool.
9. Flood Insurance Rat Map 08041C0754G with an effective date of December 7, 2018.
10. NOAA Atlas 14, Volume 8, Version 2 as available at https://hdsc.nws.noaa.gov

Due to the amount and type of comments provided, additional comments should be expected with the re-submittal.

Noted.

# APPENDIX A

**FIRM Map**
**Web Soil Survey**

# National Flood Hazard Layer FIRMette

FEMA

104°41'53"W 38°50'34"N

104°41'16"W 38°50'6"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

*Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020*

## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

**SPECIAL FLOOD HAZARD AREAS**
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

**OTHER AREAS OF FLOOD HAZARD**
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

**OTHER AREAS**
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

**GENERAL STRUCTURES**
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

**OTHER FEATURES**
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

**MAP PANELS**
- Digital Data Available
- No Digital Data Available
- Unmapped

N

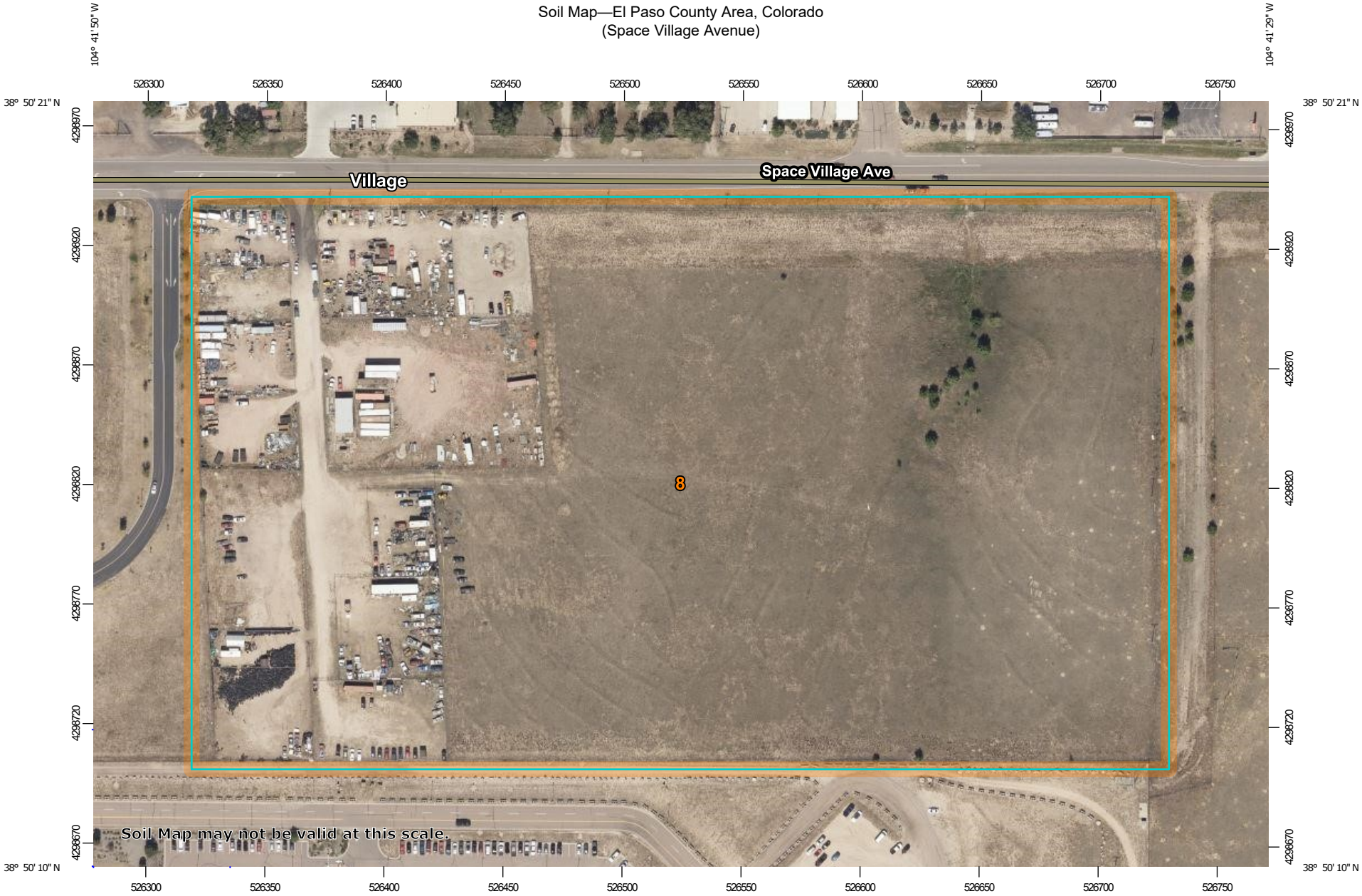
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/4/2022 at 6:52 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Soil Map—El Paso County Area, Colorado
(Space Village Avenue)




Map Scale: 1:2,260 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 30 60 120 180

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

**Special Point Features**
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 19, Aug 31, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

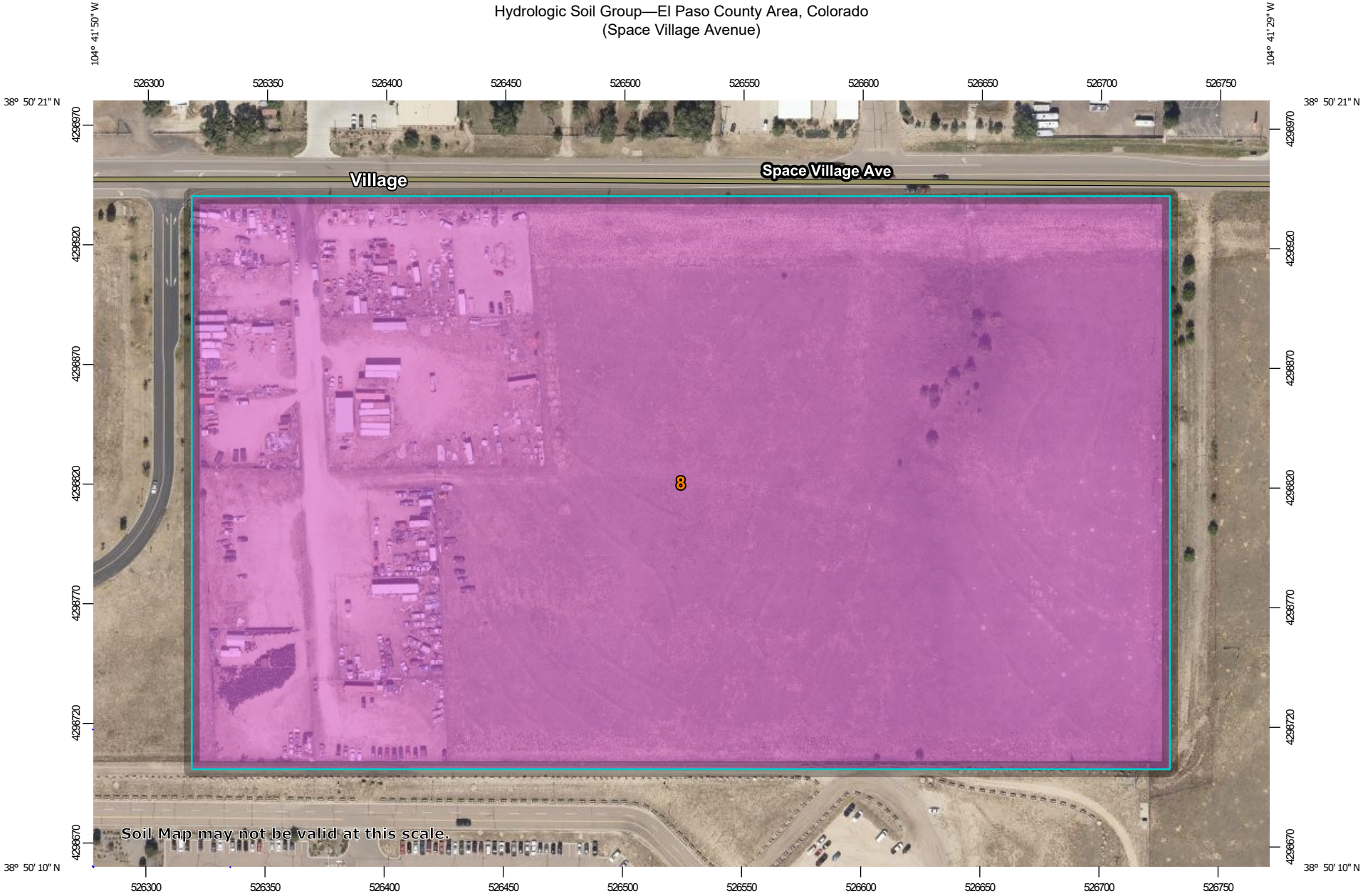
Date(s) aerial images were photographed: Aug 19, 2018—Sep 23, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| 8 | Blakeland loamy sand, 1 to 9 percent slopes | 24.4 | 100.0% |
| **Totals for Area of Interest** | | **24.4** | **100.0%** |

Hydrologic Soil Group—El Paso County Area, Colorado
(Space Village Avenue)




Map Scale: 1:2,260 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 30 60 120 180

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

## MAP LEGEND

**Area of Interest (AOI)**

Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**

A
A/D
B
B/D
C
C/D
D
Not rated or not available

**Soil Rating Lines**

A
A/D
B
B/D
C
C/D
D
Not rated or not available

**Soil Rating Points**

A
A/D
B
B/D
C
C/D
D
Not rated or not available

**Water Features**

Streams and Canals

**Transportation**

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

**Background**

Aerial Photography

## MAP INFORMATION

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# Hydrologic Soil Group

| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
|---|---|---|---|---|
| 8 | Blakeland loamy sand, 1 to 9 percent slopes | A | 24.4 | 100.0% |
| **Totals for Area of Interest** | | | **24.4** | **100.0%** |

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff: None Specified*

Soil Map—El Paso County Area, Colorado
(SV - Off Site)

Map Scale: 1:4,320 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

**Special Point Features**
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 19, Aug 31, 2021

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Date(s) aerial images were photographed: Aug 19, 2018—Sep 23, 2018

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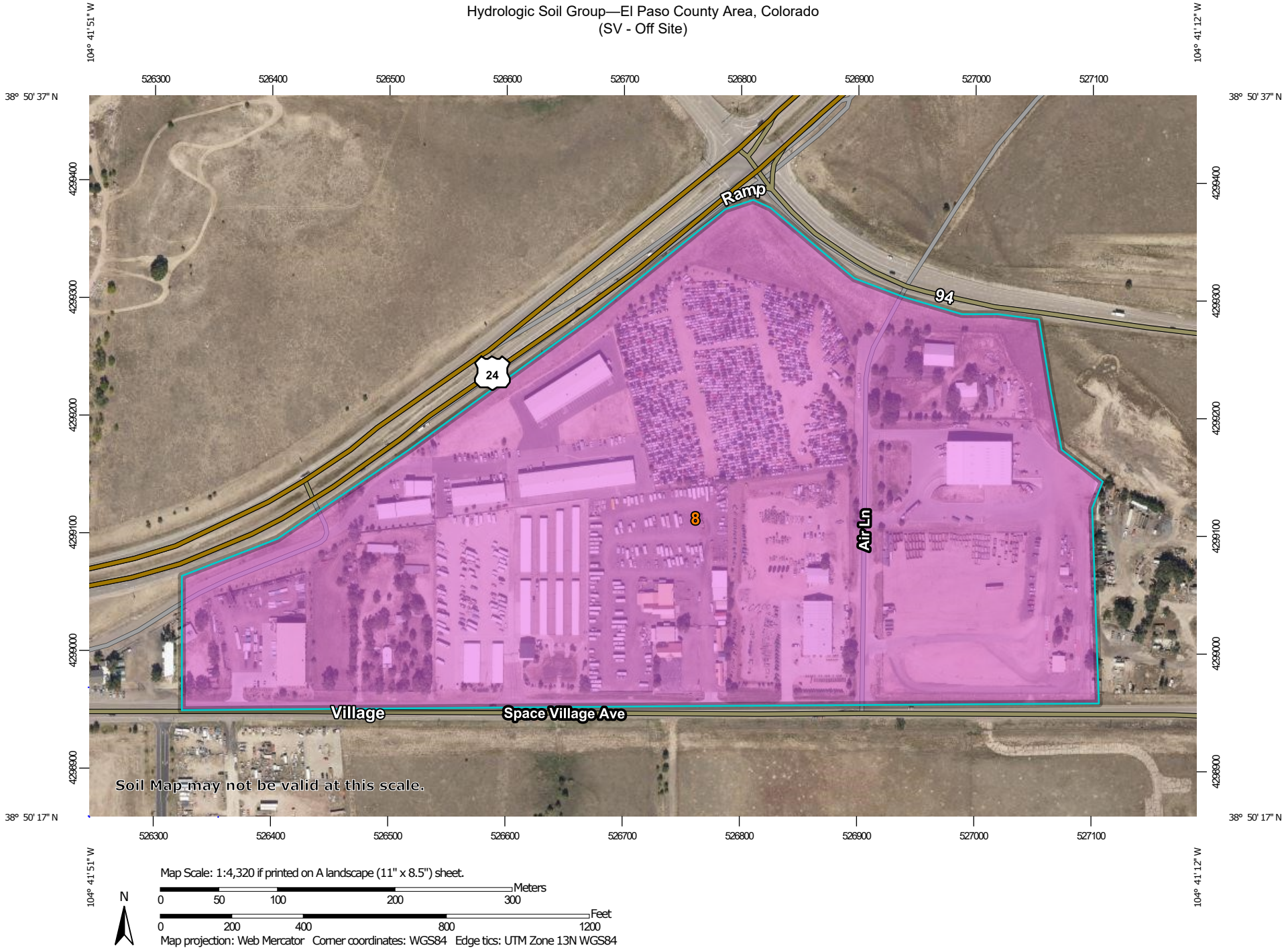
# Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| 8 | Blakeland loamy sand, 1 to 9 percent slopes | 56.1 | 100.0% |
| **Totals for Area of Interest** | | **56.1** | **100.0%** |

Hydrologic Soil Group—El Paso County Area, Colorado
(SV - Off Site)




Map Scale: 1:4,320 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

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Area of Interest (AOI)

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A/D
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B/D
C
C/D
D
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**Soil Rating Lines**

A
A/D
B
B/D
C
C/D
D
Not rated or not available

**Soil Rating Points**

A
A/D
B
B/D
C
C/D
D
Not rated or not available

**Water Features**

Streams and Canals

**Transportation**

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

**Background**

Aerial Photography

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Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 19, Aug 31, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 19, 2018—Sep 23, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Hydrologic Soil Group

| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
|---|---|---|---|---|
| 8 | Blakeland loamy sand, 1 to 9 percent slopes | A | 56.1 | 100.0% |
| **Totals for Area of Interest** | | | **56.1** | **100.0%** |

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff: None Specified*

# APPENDIX B

## Hydrology & Hydraulics Calculations and Analysis

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as the site development of each of the lots is not yet known, an imperviousness consistent with industrial areas should be utilized (+80%). Using a 50% impervious value will highly limit the development of the two lots.

Date: 5/3/22

By: JDT

## Weighted Imperviousness

Job Name: 0 Space Village Ave.

| | [1] I | $C_5$ | Revised to account for 80% imperviousness. |
|---|---|---|---|
| Open Space | 2 | 0.01 | |
| Single Family (Large) | 15 | 0.08 | 0.23 |
| Space Village ROW | 40 | 0.27 | 0.42 |
| Yards | 50 | 0.36 | 0.50 |
| Drives, Walks, Buildings | 90 | 0.75 | 0.81 |

[1]% Impervious from UDFCD, *USDCM Vol. I* , Table 6-3

EXISTING SITE

| Basin | Open Space | Single Fam. Large | Space Village ROW | Yards | Drives, Walks, & Buildings | Total | I | Weighted Runoff Coeff $C_5$ | Weighted Runoff Coeff $C_{100}$ |
|---|---|---|---|---|---|---|---|---|---|
| OS-E | 4.299 | 1.147 | 0.000 | 34.328 | 13.201 | 52.976 | 55 | 0.42 | 0.54 |
| OS-W | 0.000 | 2.531 | 0.000 | 4.294 | 0.000 | 6.825 | 37 | 0.26 | 0.40 |
| H1 | 11.414 | 0.000 | 0.855 | 0.000 | 0.000 | 12.269 | 5 | 0.03 | 0.15 |
| H2 | 11.804 | 0.000 | 0.956 | 0.000 | 0.000 | 12.760 | 5 | 0.03 | 0.15 |
| Site Totals | 23.218 | 0.000 | 1.810 | 0.000 | 0.000 | 25.029 | 5 | 0.03 | 0.15 |

PROPOSED SITE

| Basin | Open Space | Single Fam. Large | Space Village ROW | Yards | Drives, Walks, & Buildings | Total | I | Weighted Runoff Coeff $C_5$ | Weighted Runoff Coeff $C_{100}$ |
|---|---|---|---|---|---|---|---|---|---|
| A | 0.000 | 0.000 | 0.855 | 11.414 | 0.000 | 12.269 | 49 | 0.35 | 0.49 |
| B | 0.000 | 0.000 | 0.956 | 11.804 | 0.000 | 12.760 | 49 | 0.35 | 0.49 |
| Site Totals | 0.000 | 0.000 | 1.810 | 23.218 | 0.000 | 25.029 | 49 | 0.35 | 0.49 |

Hydrologic Soil Group = A

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## Time of Concentration

Job Name: 0 Space Village Ave.

Date: 5/3/22

By: JDT

| Sub-Basin Data | | | **Initial/Overland Time (Ti) | | | Travel Time Tt | | | | ***Tc Check Urbanized Basin | | Final Tc | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Desig | C5 | Area Ac | Length Ft | Slope Ft/Ft | Ti Min | Length Ft | Slope % | *Vel FPS | Tt Min | Tot Len Ft | Tc Min | Min | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | |
| | | | | | | | | | | | | | |
| HISTORIC | | | | | | | | | | | | | |
| OS-E | 0.42 | 52.98 | 730 | 3.3 | 22.3 | 630 | 1.3 | 0.8 | 13.2 | | | | Undeveloped (K=7) |
| | | | | | | 320 | 1.0 | 1.5 | 3.6 | | | 39.0 | Undeveloped (K=15) |
| OS-W | 0.26 | 6.82 | 600 | 2.5 | 27.6 | 400 | 1.0 | 1.5 | 4.4 | | | 32.0 | Undeveloped (K=15) |
| H1 | 0.03 | 12.27 | 890 | 2.5 | 42.7 | | | | | | | 42.7 | Undeveloped |
| H2 | 0.03 | 12.76 | 890 | 2.6 | 42.1 | | | | | | | 42.1 | Undeveloped |
| | | | | | | | | | | | | | |
| PROPOSED | | | | | | | | | | | | | |
| A | 0.35 | 0.00 | 300 | 2.5 | 17.2 | 590 | 2.5 | 2.4 | 4.1 | 890 | 21.5 | 21.4 | (K=15) |
| B | 0.35 | 0.00 | 300 | 2.6 | 17.0 | 590 | 2.6 | 2.4 | 4.1 | 890 | 21.5 | 21.1 | (K=15) |
| | | | | | | | | | | | | | |

*Velocity from UDFCD - DCM, Vol. I, Equation 6-4 and Table 6-2

**Ti caclualted from UDFCD - DCM, Vol. I, Equation 6-3

100 foot max for urban land uses

Revised.

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# Stormwater Runoff

Job Name: 0 Space Village Ave.

Date: 5/3/22

By: JDT

Return Period: 5-yr

Intensity[1]: -1.50 ln(Tc) + 7.583

| Design Point | Direct Runoff | | | | | | | Total Runoff | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Area Desig | Area (Ac) | Runoff Coeff | Tc (min) | CA | I (in/hr) | Q (cfs) | Tc (min) | Total CA | I (in/hr) | Q (cfs) | |
| | | | | | | | | | | | | |
| | OS-E | 52.98 | 0.42 | 39.0 | 22.39 | 2.09 | 46.76 | | | | | To the two (2) 30" CMP under SV |
| | OS-W | 6.82 | 0.26 | 32.0 | 1.75 | 2.38 | 4.17 | | | | | Overtopping of SV (only) |
| | | | | | | | | | | | | |
| | H1 | 12.27 | 0.03 | 42.7 | 0.34 | 1.95 | 0.67 | | | | | |
| | H2 | 12.76 | 0.03 | 42.1 | 0.38 | 1.97 | 0.74 | | | | | |
| | | | | | | | | | | | | |
| | A | 12.27 | 0.35 | 21.4 | 4.34 | 2.99 | 12.97 | | | | | |
| | B | 12.76 | 0.35 | 21.1 | 4.51 | 3.01 | 13.56 | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

[1]Intensity from Colorado Springs Drainage Criteria Manual, Volume 1, Figure 6-5

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# Stormwater Runoff

Job Name: 0 Space Village Ave.

Date: 5/3/22

By: JDT

Return Period: 100-yr

Intensity[1]: -2.52 ln(Tc) + 12.735

| Design Point | Direct Runoff | | | | | | | Total Runoff | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Area Desig | Area (Ac) | Runoff Coeff | Tc (min) | CA | I (in/hr) | Q (cfs) | Tc (min) | Total CA | I (in/hr) | Q (cfs) | |
| | | | | | | | | | | | | |
| | OS-E | 52.98 | 0.54 | 39.0 | 28.68 | 3.50 | 100.48 | | | | | To the two (2) 30" CMP under SV |
| | OS-W | 6.82 | 0.40 | 32.0 | 2.73 | 4.00 | 10.91 | | | | | Overtopping of SV (only) |
| | | | | | | | | | | | | |
| | H1 | 12.27 | 0.15 | 42.7 | 1.84 | 3.28 | 6.04 | | | | | |
| | H2 | 12.76 | 0.15 | 42.1 | 1.94 | 3.31 | 6.41 | | | | | |
| | | | | | | | | | | | | |
| | A | 12.27 | 0.49 | 21.4 | 6.07 | 5.02 | 30.43 | | | | | |
| | B | 12.76 | 0.49 | 21.1 | 6.30 | 5.05 | 31.84 | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

[1]Intensity from Colorado Springs Drainage Criteria Manual, Volume 1, Figure 6-5

# Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Tuesday, May 3 2022

## OS-E Diversion Channel

**Trapezoidal**

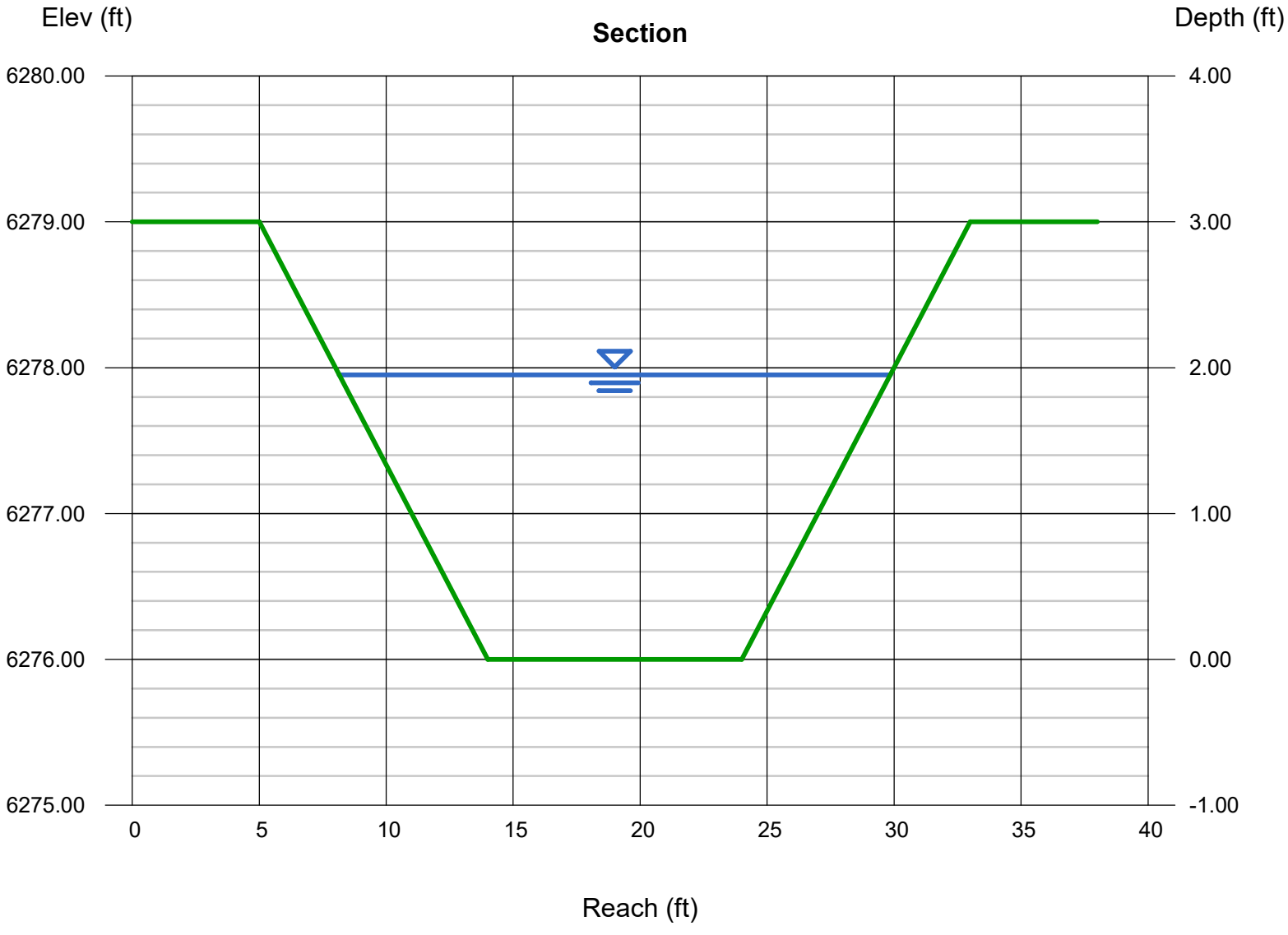
| | |
|---|---|
| Bottom Width (ft) | = 10.00 |
| Side Slopes (z:1) | = 3.00, 3.00 |
| Total Depth (ft) | = 3.00 |
| Invert Elev (ft) | = 6276.00 |
| Slope (%) | = 0.50 |
| N-Value | = 0.040 |

**Calculations**

| | |
|---|---|
| Compute by: | Known Q |
| Known Q (cfs) | = 100.50 |

**Highlighted**

| | |
|---|---|
| Depth (ft) | = 1.95 |
| Q (cfs) | = 100.50 |
| Area (sqft) | = 30.91 |
| Velocity (ft/s) | = 3.25 |
| Wetted Perim (ft) | = 22.33 |
| Crit Depth, Yc (ft) | = 1.28 |
| Top Width (ft) | = 21.70 |
| EGL (ft) | = 2.11 |



# Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Tuesday, May 3 2022

## OS-E Diversion Channel

**Triangular**

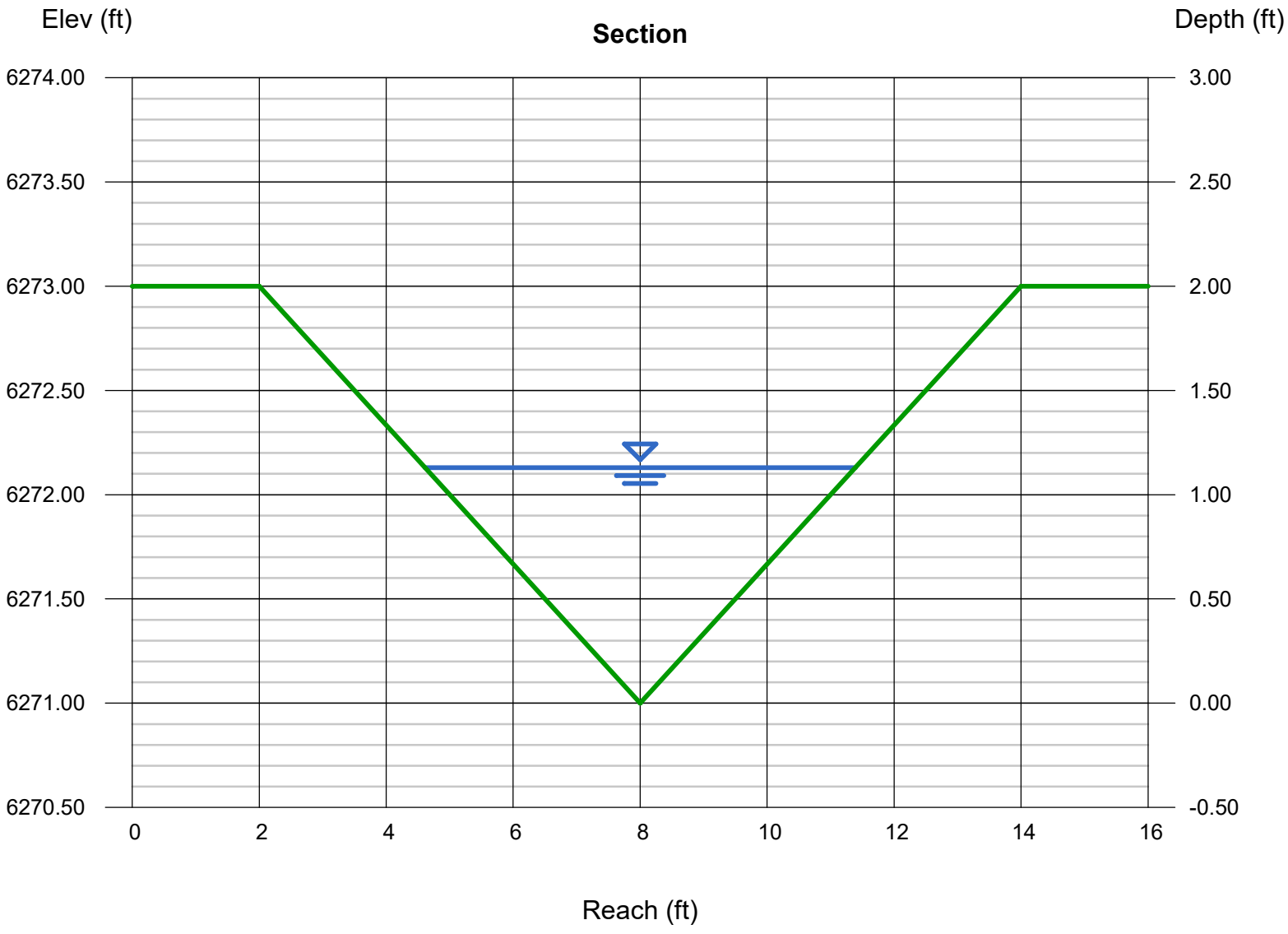
| | |
|---|---|
| Side Slopes (z:1) | = 3.00, 3.00 |
| Total Depth (ft) | = 2.00 |
| Invert Elev (ft) | = 6271.00 |
| Slope (%) | = 1.40 |
| N-Value | = 0.040 |

**Calculations**

| | |
|---|---|
| Compute by: | Known Q |
| Known Q (cfs) | = 10.90 |

**Highlighted**

| | |
|---|---|
| Depth (ft) | = 1.13 |
| Q (cfs) | = 10.90 |
| Area (sqft) | = 3.83 |
| Velocity (ft/s) | = 2.85 |
| Wetted Perim (ft) | = 7.15 |
| Crit Depth, Yc (ft) | = 0.97 |
| Top Width (ft) | = 6.78 |
| EGL (ft) | = 1.26 |



**NOAA Atlas 14, Volume 8, Version 2**
**Location name: Cimarron Hills, Colorado, USA***
**Latitude: 38.8377°, Longitude: -104.6941°**
**Elevation: 6285.18 ft****
* source: ESRI Maps
** source: USGS

**POINT PRECIPITATION FREQUENCY ESTIMATES**

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

## PF tabular

**PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]**

| Duration | Average recurrence interval (years) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 5 | 10 | 25 | 50 | 100 | 200 | 500 | 1000 |
| 5-min | **0.238** (0.200-0.286) | **0.289** (0.242-0.348) | **0.378** (0.315-0.456) | **0.457** (0.379-0.554) | **0.573** (0.461-0.728) | **0.669** (0.523-0.860) | **0.771** (0.579-1.02) | **0.880** (0.631-1.19) | **1.03** (0.708-1.44) | **1.15** (0.767-1.62) |
| 10-min | **0.349** (0.292-0.419) | **0.423** (0.354-0.509) | **0.553** (0.461-0.667) | **0.669** (0.554-0.811) | **0.839** (0.675-1.07) | **0.980** (0.766-1.26) | **1.13** (0.848-1.49) | **1.29** (0.924-1.75) | **1.51** (1.04-2.11) | **1.69** (1.12-2.38) |
| 15-min | **0.425** (0.357-0.511) | **0.516** (0.432-0.621) | **0.674** (0.563-0.814) | **0.815** (0.676-0.989) | **1.02** (0.823-1.30) | **1.20** (0.934-1.54) | **1.38** (1.03-1.81) | **1.57** (1.13-2.13) | **1.84** (1.26-2.57) | **2.06** (1.37-2.90) |
| 30-min | **0.647** (0.543-0.778) | **0.783** (0.656-0.943) | **1.02** (0.852-1.23) | **1.23** (1.02-1.50) | **1.55** (1.24-1.97) | **1.81** (1.41-2.32) | **2.08** (1.56-2.74) | **2.37** (1.70-3.21) | **2.78** (1.91-3.88) | **3.11** (2.07-4.38) |
| 60-min | **0.863** (0.724-1.04) | **1.02** (0.853-1.23) | **1.30** (1.09-1.58) | **1.57** (1.31-1.91) | **1.99** (1.61-2.55) | **2.35** (1.84-3.04) | **2.74** (2.07-3.64) | **3.17** (2.28-4.32) | **3.79** (2.61-5.30) | **4.30** (2.86-6.04) |
| 2-hr | **1.08** (0.912-1.29) | **1.25** (1.06-1.50) | **1.59** (1.34-1.91) | **1.92** (1.60-2.31) | **2.44** (2.00-3.12) | **2.90** (2.30-3.74) | **3.40** (2.59-4.50) | **3.97** (2.88-5.39) | **4.80** (3.33-6.68) | **5.48** (3.67-7.66) |
| 3-hr | **1.19** (1.01-1.42) | **1.36** (1.15-1.62) | **1.71** (1.44-2.04) | **2.06** (1.73-2.47) | **2.64** (2.18-3.39) | **3.16** (2.52-4.08) | **3.74** (2.87-4.95) | **4.41** (3.22-5.98) | **5.39** (3.77-7.50) | **6.21** (4.18-8.65) |
| 6-hr | **1.36** (1.17-1.61) | **1.54** (1.32-1.82) | **1.92** (1.63-2.28) | **2.31** (1.96-2.76) | **2.98** (2.49-3.82) | **3.59** (2.90-4.62) | **4.28** (3.32-5.64) | **5.07** (3.74-6.86) | **6.25** (4.41-8.66) | **7.24** (4.91-10.0) |
| 12-hr | **1.51** (1.30-1.77) | **1.73** (1.49-2.03) | **2.18** (1.87-2.57) | **2.63** (2.24-3.11) | **3.37** (2.83-4.26) | **4.03** (3.27-5.13) | **4.77** (3.72-6.23) | **5.61** (4.17-7.51) | **6.85** (4.86-9.40) | **7.88** (5.38-10.8) |
| 24-hr | **1.68** (1.46-1.96) | **1.95** (1.70-2.28) | **2.48** (2.15-2.91) | **2.99** (2.57-3.51) | **3.78** (3.18-4.72) | **4.48** (3.65-5.63) | **5.24** (4.10-6.75) | **6.08** (4.54-8.06) | **7.31** (5.21-9.94) | **8.32** (5.72-11.4) |
| 2-day | **1.91** (1.68-2.22) | **2.24** (1.96-2.59) | **2.83** (2.47-3.29) | **3.38** (2.94-3.95) | **4.22** (3.57-5.20) | **4.94** (4.05-6.15) | **5.72** (4.50-7.29) | **6.57** (4.93-8.61) | **7.78** (5.58-10.5) | **8.77** (6.08-11.9) |
| 3-day | **2.08** (1.84-2.40) | **2.44** (2.15-2.82) | **3.08** (2.70-3.56) | **3.66** (3.19-4.25) | **4.53** (3.83-5.53) | **5.26** (4.32-6.49) | **6.04** (4.77-7.65) | **6.89** (5.18-8.97) | **8.09** (5.82-10.8) | **9.06** (6.30-12.2) |
| 4-day | **2.23** (1.97-2.56) | **2.61** (2.31-3.00) | **3.27** (2.88-3.78) | **3.87** (3.39-4.49) | **4.77** (4.05-5.79) | **5.51** (4.54-6.78) | **6.30** (4.99-7.95) | **7.15** (5.40-9.28) | **8.35** (6.03-11.1) | **9.31** (6.50-12.6) |
| 7-day | **2.60** (2.32-2.98) | **3.02** (2.69-3.46) | **3.75** (3.33-4.30) | **4.40** (3.87-5.07) | **5.35** (4.56-6.45) | **6.13** (5.08-7.49) | **6.96** (5.54-8.72) | **7.84** (5.95-10.1) | **9.08** (6.59-12.0) | **10.1** (7.07-13.5) |
| 10-day | **2.93** (2.63-3.34) | **3.39** (3.03-3.86) | **4.17** (3.71-4.77) | **4.86** (4.30-5.58) | **5.87** (5.02-7.03) | **6.69** (5.56-8.12) | **7.55** (6.04-9.41) | **8.47** (6.45-10.9) | **9.74** (7.10-12.9) | **10.8** (7.59-14.4) |
| 20-day | **3.87** (3.50-4.38) | **4.45** (4.01-5.04) | **5.41** (4.86-6.15) | **6.24** (5.57-7.12) | **7.41** (6.37-8.77) | **8.34** (6.98-10.0) | **9.29** (7.47-11.5) | **10.3** (7.88-13.0) | **11.6** (8.53-15.2) | **12.7** (9.02-16.8) |
| 30-day | **4.66** (4.23-5.25) | **5.35** (4.85-6.03) | **6.48** (5.85-7.33) | **7.43** (6.66-8.44) | **8.74** (7.53-10.3) | **9.76** (8.19-11.6) | **10.8** (8.70-13.2) | **11.8** (9.09-14.9) | **13.2** (9.71-17.1) | **14.3** (10.2-18.9) |
| 45-day | **5.65** (5.16-6.34) | **6.50** (5.92-7.30) | **7.86** (7.13-8.85) | **8.97** (8.08-10.1) | **10.5** (9.04-12.2) | **11.6** (9.76-13.7) | **12.7** (10.3-15.4) | **13.8** (10.6-17.2) | **15.2** (11.2-19.6) | **16.2** (11.7-21.4) |
| 60-day | **6.50** (5.95-7.27) | **7.49** (6.85-8.39) | **9.05** (8.24-10.2) | **10.3** (9.32-11.6) | **12.0** (10.3-13.8) | **13.2** (11.1-15.5) | **14.3** (11.6-17.3) | **15.5** (12.0-19.3) | **16.9** (12.5-21.7) | **17.9** (12.9-23.5) |

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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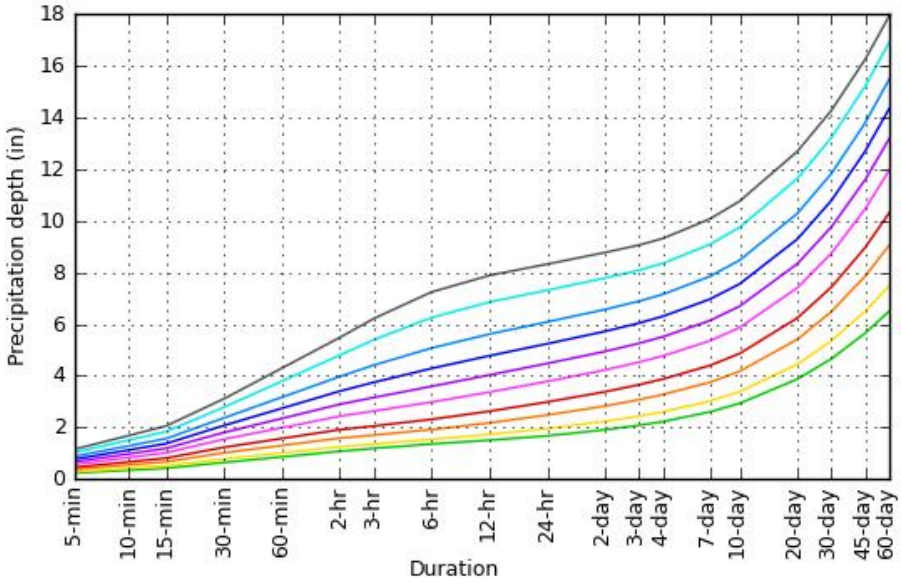
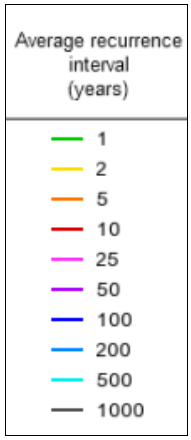
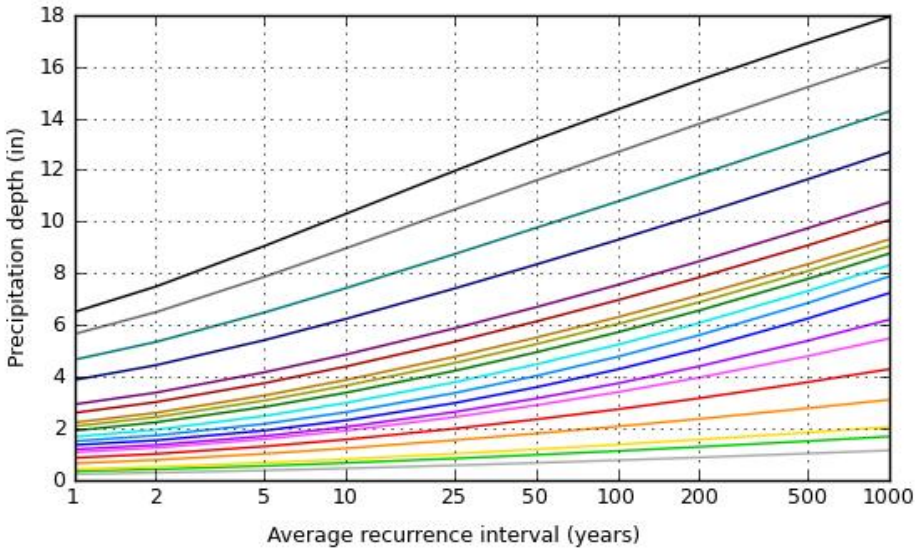
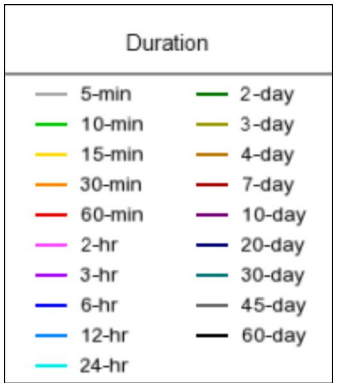
## PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 38.8377°, Longitude: -104.6941°




NOAA Atlas 14, Volume 8, Version 2

Created (GMT): Thu May 5 18:17:53 2022

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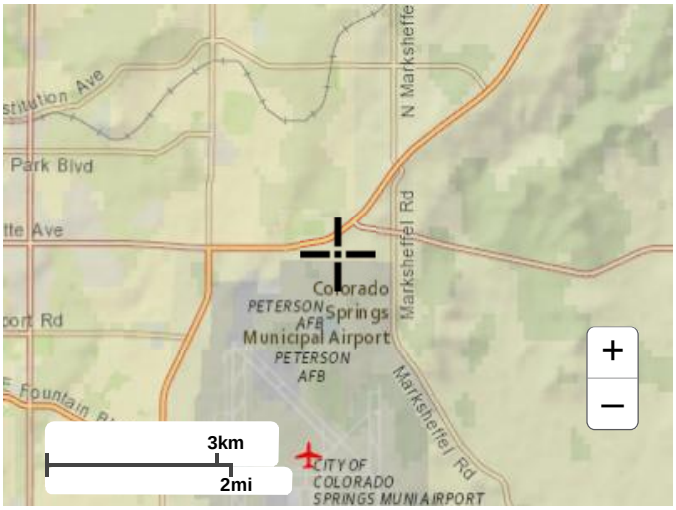
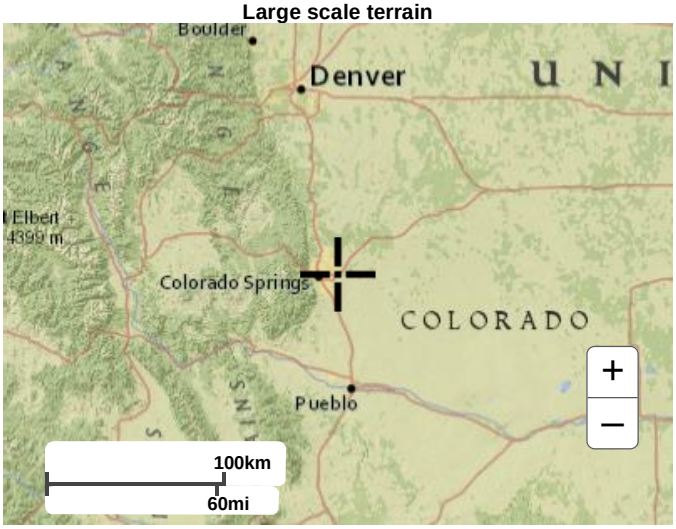
## Maps & aerials

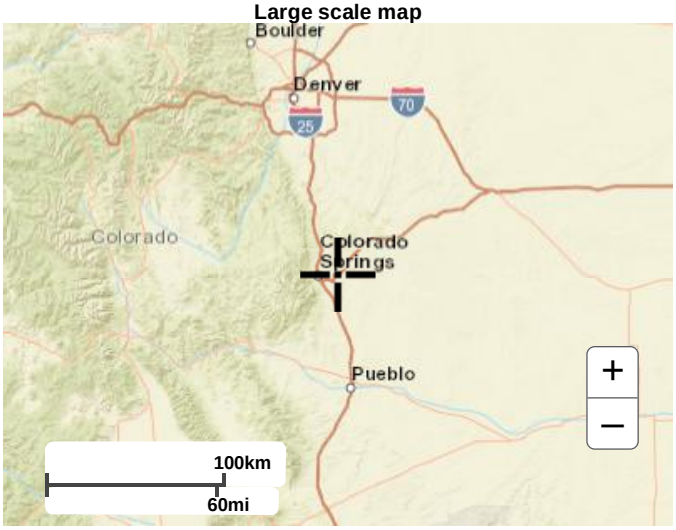
**Small scale terrain**




**Large scale terrain**




**Large scale map**



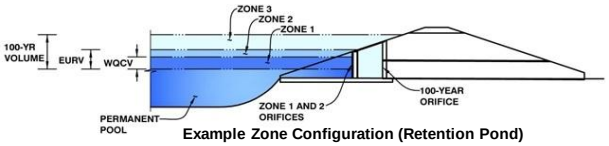

**Large scale aerial**

# DETENTION BASIN STAGE-STORAGE TABLE BUILDER

*MHFD-Detention, Version 4.03 (May 2020)*

Project: Hampton Partners

Basin ID: East Half




**Example Zone Configuration (Retention Pond)**

## Watershed Information

| | | |
|---|---|---|
| Selected BMP Type = | EDB | |
| Watershed Area = | 12.27 | acres |
| Watershed Length = | 740 | ft |
| Watershed Length to Centroid = | 350 | ft |
| Watershed Slope = | 0.025 | ft/ft |
| Watershed Imperviousness = | 49.00% | percent |
| Percentage Hydrologic Soil Group A = | 100.0% | percent |
| Percentage Hydrologic Soil Group B = | 0.0% | percent |
| Percentage Hydrologic Soil Groups C/D = | 0.0% | percent |
| Target WQCV Drain Time = | 40.0 | hours |
| Location for 1-hr Rainfall Depths = | User Input | |

After providing required inputs above including 1-hour rainfall depths, click 'Run CUHP' to generate runoff hydrographs using the embedded Colorado Urban Hydrograph Procedure.

| | | | Optional User Overrides | |
|---|---|---|---|---|
| Water Quality Capture Volume (WQCV) = | 0.208 | acre-feet | | acre-feet |
| Excess Urban Runoff Volume (EURV) = | 0.689 | acre-feet | | acre-feet |
| 2-yr Runoff Volume (P1 = 1.02 in.) = | 0.411 | acre-feet | 1.02 | inches |
| 5-yr Runoff Volume (P1 = 1.3 in.) = | 0.548 | acre-feet | 1.30 | inches |
| 10-yr Runoff Volume (P1 = 1.57 in.) = | 0.689 | acre-feet | 1.57 | inches |
| 25-yr Runoff Volume (P1 = 1.99 in.) = | 0.987 | acre-feet | 1.99 | inches |
| 50-yr Runoff Volume (P1 = 2.35 in.) = | 1.282 | acre-feet | 2.35 | inches |
| 100-yr Runoff Volume (P1 = 2.74 in.) = | 1.653 | acre-feet | 2.74 | inches |
| 500-yr Runoff Volume (P1 = 3.79 in.) = | 2.650 | acre-feet | 3.79 | inches |
| Approximate 2-yr Detention Volume = | 0.380 | acre-feet | | |
| Approximate 5-yr Detention Volume = | 0.506 | acre-feet | | |
| Approximate 10-yr Detention Volume = | 0.639 | acre-feet | | |
| Approximate 25-yr Detention Volume = | 0.868 | acre-feet | | |
| Approximate 50-yr Detention Volume = | 1.019 | acre-feet | | |
| Approximate 100-yr Detention Volume = | 1.198 | acre-feet | | |

Please refer to table 6-2 of City of Colorado Springs 2014 DCMV1 which the County adopted.

Revised.

## Define Zones and Basin Geometry

| | | |
|---|---|---|
| Zone 1 Volume (WQCV) = | 0.208 | acre-feet |
| Zone 2 Volume (EURV - Zone 1) = | 0.481 | acre-feet |
| Zone 3 Volume (100-year - Zones 1 & 2) = | 0.508 | acre-feet |
| Total Detention Basin Volume = | 1.198 | acre-feet |
| Initial Surcharge Volume (ISV) = | 27 | ft³ |
| Initial Surcharge Depth (ISD) = | | ft |

Table 6-2. Rainfall Depths for Colorado Springs

| Return Period | 1-Hour Depth | 6-Hour Depth |
|---|---|---|
| 2 | 1.19 | 1.70 |
| 5 | 1.50 | 2.10 |
| 10 | 1.75 | 2.40 |
| 25 | 2.00 | 2.90 |
| 50 | 2.25 | 3.20 |
| 100 | 2.52 | 3.50 |
| Where Z = 6.840 ft/100 | | |

| | | |
|---|---|---|
| Width of Main Basin ($W_{MAIN}$) = | 115.7 | ft |
| Area of Main Basin ($A_{MAIN}$) = | 24,696 | ft² |
| Volume of Main Basin ($V_{MAIN}$) = | 45,462 | ft³ |
| Calculated Total Basin Volume ($V_{total}$) = | 1.191 | acre-feet |

Depth Increment = 0.10 ft

| Stage - Storage Description | Stage (ft) | Optional Override Stage (ft) | Length (ft) | Width (ft) | Area (ft²) | Optional Override Area (ft²) | Area (acre) | Volume (ft³) | Volume (ac-ft) |
|---|---|---|---|---|---|---|---|---|---|
| Top of Micropool | 0.00 | | 5.2 | 5.2 | 27 | | 0.001 | | |
| ISV | 1.00 | | 5.2 | 5.2 | 27 | | 0.001 | 27 | 0.001 |
| | 1.10 | | 5.2 | 5.2 | 27 | | 0.001 | 30 | 0.001 |
| | 1.20 | | 5.2 | 5.2 | 27 | | 0.001 | 33 | 0.001 |
| | 1.30 | | 5.2 | 5.2 | 27 | | 0.001 | 35 | 0.001 |
| | 1.40 | | 5.2 | 5.2 | 27 | | 0.001 | 38 | 0.001 |
| | 1.50 | | 5.2 | 5.2 | 27 | | 0.001 | 41 | 0.001 |
| | 1.60 | | 25.6 | 15.2 | 390 | | 0.009 | 58 | 0.001 |
| | 1.70 | | 46.0 | 25.2 | 1,160 | | 0.027 | 132 | 0.003 |
| | 1.80 | | 66.4 | 35.2 | 2,339 | | 0.054 | 304 | 0.007 |
| | 1.90 | | 86.8 | 45.2 | 3,925 | | 0.090 | 614 | 0.014 |
| | 2.00 | | 107.2 | 55.2 | 5,920 | | 0.136 | 1,103 | 0.025 |
| | 2.10 | | 127.6 | 65.2 | 8,322 | | 0.191 | 1,811 | 0.042 |
| | 2.20 | | 148.0 | 75.2 | 11,133 | | 0.256 | 2,781 | 0.064 |
| | 2.30 | | 168.4 | 85.2 | 14,352 | | 0.329 | 4,051 | 0.093 |
| | 2.40 | | 188.8 | 95.2 | 17,978 | | 0.413 | 5,665 | 0.130 |
| Floor | 2.44 | | 197.0 | 99.2 | 19,543 | | 0.449 | 6,415 | 0.147 |
| | 2.50 | | 197.5 | 99.7 | 19,685 | | 0.452 | 7,592 | 0.174 |
| Zone 1 (WQCV) | 2.58 | | 198.1 | 100.3 | 19,876 | | 0.456 | 9,174 | 0.211 |
| | 2.60 | | 198.3 | 100.5 | 19,924 | | 0.457 | 9,572 | 0.220 |
| | 2.70 | | 199.1 | 101.3 | 20,163 | | 0.463 | 11,576 | 0.266 |
| | 2.80 | | 199.9 | 102.1 | 20,404 | | 0.468 | 13,605 | 0.312 |
| | 2.90 | | 200.7 | 102.9 | 20,646 | | 0.474 | 15,657 | 0.359 |
| | 3.00 | | 201.5 | 103.7 | 20,890 | | 0.480 | 17,734 | 0.407 |
| | 3.10 | | 202.3 | 104.5 | 21,135 | | 0.485 | 19,835 | 0.455 |
| | 3.20 | | 203.1 | 105.3 | 21,381 | | 0.491 | 21,961 | 0.504 |
| | 3.30 | | 203.9 | 106.1 | 21,628 | | 0.497 | 24,111 | 0.554 |
| | 3.40 | | 204.7 | 106.9 | 21,877 | | 0.502 | 26,287 | 0.603 |
| | 3.50 | | 205.5 | 107.7 | 22,127 | | 0.508 | 28,487 | 0.654 |
| Zone 2 (EURV) | 3.57 | | 206.0 | 108.3 | 22,302 | | 0.512 | 30,042 | 0.690 |
| | | | 206.3 | 108.5 | 22,378 | | 0.514 | 30,712 | 0.705 |
| | | | 207.1 | 109.3 | 22,630 | | 0.520 | 32,962 | 0.757 |
| | | | 207.9 | 110.1 | 22,884 | | 0.525 | 35,238 | 0.809 |
| | | | 208.7 | 110.9 | 23,139 | | 0.531 | 37,539 | 0.862 |
| | | | 209.5 | 111.7 | 23,395 | | 0.537 | 39,866 | 0.915 |
| | | | 210.3 | 112.5 | 23,653 | | 0.543 | 42,218 | 0.969 |
| | | | 211.1 | 113.3 | 23,912 | | 0.549 | 44,596 | 1.024 |
| | 4.30 | | 211.9 | 114.1 | 24,172 | | 0.555 | 47,001 | 1.079 |
| | 4.40 | | 212.7 | 114.9 | 24,433 | | 0.561 | 49,431 | 1.135 |
| | 4.50 | | 213.5 | 115.7 | 24,696 | | 0.567 | 51,887 | 1.191 |
| | 4.52 | | 213.6 | 115.9 | 24,748 | | 0.568 | 52,382 | 1.203 |
| | 4.60 | | 214.3 | 116.5 | 24,960 | | 0.573 | 54,370 | 1.248 |
| | 4.70 | | 215.1 | 117.3 | 25,225 | | 0.579 | 56,879 | 1.306 |
| | 4.80 | | 215.9 | 118.1 | 25,491 | | 0.585 | 59,415 | 1.364 |
| | 4.90 | | 216.7 | 118.9 | 25,759 | | 0.591 | 61,978 | 1.423 |
| | 5.00 | | 217.5 | 119.7 | 26,028 | | 0.598 | 64,567 | 1.482 |
| | 5.10 | | 218.3 | 120.5 | 26,299 | | 0.604 | 67,183 | 1.542 |
| | 5.20 | | 219.1 | 121.3 | 26,570 | | 0.610 | 69,827 | 1.603 |
| | 5.30 | | 219.9 | 122.1 | 26,843 | | 0.616 | 72,497 | 1.664 |
| | 5.40 | | 220.7 | 122.9 | 27,117 | | 0.623 | 75,195 | 1.726 |
| | 5.50 | | 221.5 | 123.7 | 27,393 | | 0.629 | 77,921 | 1.789 |
| | 5.60 | | 222.3 | 124.5 | 27,670 | | 0.635 | 80,674 | 1.852 |
| | 5.70 | | 223.1 | 125.3 | 27,948 | | 0.642 | 83,455 | 1.916 |
| | 5.80 | | 223.9 | 126.1 | 28,227 | | 0.648 | 86,264 | 1.980 |
| | 5.90 | | 224.7 | 126.9 | 28,508 | | 0.654 | 89,100 | 2.045 |
| | 6.00 | | 225.5 | 127.7 | 28,790 | | 0.661 | 91,965 | 2.111 |
| | 6.10 | | 226.3 | 128.5 | 29,073 | | 0.667 | 94,858 | 2.178 |
| | 6.20 | | 227.1 | 129.3 | 29,357 | | 0.674 | 97,780 | 2.245 |

Provide outlet structure calc.

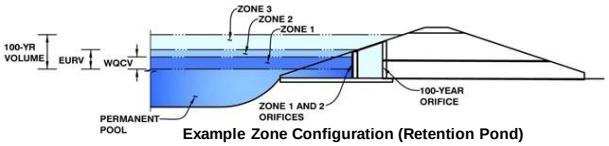
Revised design (infiltration) does not include outlet structure(s).

# DETENTION BASIN STAGE-STORAGE TABLE BUILDER

*MHFD-Detention, Version 4.03 (May 2020)*

Project: Hampton Partners

Basin ID: West Half




**Example Zone Configuration (Retention Pond)**

## Watershed Information

| | | | |
|---|---|---|---|
| Selected BMP Type = | EDB | | Note: L / W Ratio < 1 |
| Watershed Area = | 12.76 | acres | L / W Ratio = 0.99 |
| Watershed Length = | 740 | ft | |
| Watershed Length to Centroid = | 350 | ft | |
| Watershed Slope = | 0.026 | ft/ft | |
| Watershed Imperviousness = | 49.00% | percent | |
| Percentage Hydrologic Soil Group A = | 100.0% | percent | |
| Percentage Hydrologic Soil Group B = | 0.0% | percent | |
| Percentage Hydrologic Soil Groups C/D = | 0.0% | percent | |
| Target WQCV Drain Time = | 40.0 | hours | |
| Location for 1-hr Rainfall Depths = | User Input | | |

After providing required inputs above including 1-hour rainfall depths, click 'Run CUHP' to generate runoff hydrographs using the embedded Colorado Urban Hydrograph Procedure.

| | | | Optional User Overrides | |
|---|---|---|---|---|
| Water Quality Capture Volume (WQCV) = | 0.216 | acre-feet | | acre-feet |
| Excess Urban Runoff Volume (EURV) = | 0.717 | acre-feet | | acre-feet |
| 2-yr Runoff Volume (P1 = 1.02 in.) = | 0.427 | acre-feet | 1.02 | inches |
| 5-yr Runoff Volume (P1 = 1.3 in.) = | 0.570 | acre-feet | 1.30 | inches |
| 10-yr Runoff Volume (P1 = 1.57 in.) = | 0.717 | acre-feet | 1.57 | inches |
| 25-yr Runoff Volume (P1 = 1.99 in.) = | 1.026 | acre-feet | 1.99 | inches |
| 50-yr Runoff Volume (P1 = 2.35 in.) = | 1.333 | acre-feet | 2.35 | inches |
| 100-yr Runoff Volume (P1 = 2.74 in.) = | 1.720 | acre-feet | 2.74 | inches |
| 500-yr Runoff Volume (P1 = 3.79 in.) = | 2.758 | acre-feet | 3.79 | inches |
| Approximate 2-yr Detention Volume = | 0.395 | acre-feet | | |
| Approximate 5-yr Detention Volume = | 0.526 | acre-feet | | |
| Approximate 10-yr Detention Volume = | 0.665 | acre-feet | | |
| Approximate 25-yr Detention Volume = | 0.903 | acre-feet | | |
| Approximate 50-yr Detention Volume = | 1.059 | acre-feet | | |
| Approximate 100-yr Detention Volume = | 1.246 | acre-feet | | |

Revised.

## Define Zones and Basin Geometry

| | | |
|---|---|---|
| Zone 1 Volume (WQCV) = | 0.216 | acre-feet |
| Zone 2 Volume (EURV - Zone 1) = | 0.500 | acre-feet |
| Zone 3 Volume (100-year - Zones 1 & 2) = | 0.529 | acre-feet |
| Total Detention Basin Volume = | 1.246 | acre-feet |
| Initial Surcharge Volume (ISV) = | 28 | $ft^3$ |
| Initial Surcharge Depth (ISD) = | 1.00 | ft |
| Total Available Detention Depth ($H_{total}$) = | 4.50 | ft |
| Depth of Trickle Channel ($H_{TC}$) = | 0.50 | ft |
| Slope of Trickle Channel ($S_{TC}$) = | 0.005 | ft/ft |
| Slopes of Main Basin Sides ($S_{main}$) = | 4 | H:V |
| Basin Length-to-Width Ratio ($R_{L/W}$) = | 2 | |

| | | |
|---|---|---|
| Initial Surcharge Area ($A_{ISV}$) = | 28 | $ft^2$ |
| Surcharge Volume Length ($L_{ISV}$) = | 5.3 | ft |
| Surcharge Volume Width ($W_{ISV}$) = | 5.3 | ft |
| Depth of Basin Floor ($H_{FLOOR}$) = | 0.97 | ft |
| Length of Basin Floor ($L_{FLOOR}$) = | 203.2 | ft |
| Width of Basin Floor ($W_{FLOOR}$) = | 102.3 | ft |
| Area of Basin Floor ($A_{FLOOR}$) = | 20,791 | $ft^2$ |
| Volume of Basin Floor ($V_{FLOOR}$) = | 6,979 | $ft^3$ |
| Depth of Main Basin ($H_{MAIN}$) = | 2.03 | ft |
| Length of Main Basin ($L_{MAIN}$) = | 219.4 | ft |
| Width of Main Basin ($W_{MAIN}$) = | 118.6 | ft |
| Area of Main Basin ($A_{MAIN}$) = | 26,016 | $ft^2$ |
| Volume of Main Basin ($V_{MAIN}$) = | 47,410 | $ft^3$ |
| Calculated Total Basin Volume ($V_{total}$) = | 1.250 | acre-feet |

Depth Increment = 0.10 ft

| Stage - Storage Description | Stage (ft) | Optional Override Stage (ft) | Length (ft) | Width (ft) | Area ($ft^2$) | Optional Override Area ($ft^2$) | Area (acre) | Volume ($ft^3$) | Volume (ac-ft) |
|---|---|---|---|---|---|---|---|---|---|
| Top of Micropool | 0.00 | | 5.3 | 5.3 | 28 | | 0.001 | | |
| ISV | 1.00 | | 5.3 | 5.3 | 28 | | 0.001 | 28 | 0.001 |
| | 1.10 | | 5.3 | 5.3 | 28 | | 0.001 | 31 | 0.001 |
| | 1.20 | | 5.3 | 5.3 | 28 | | 0.001 | 34 | 0.001 |
| | 1.30 | | 5.3 | 5.3 | 28 | | 0.001 | 37 | 0.001 |
| | 1.40 | | 5.3 | 5.3 | 28 | | 0.001 | 40 | 0.001 |
| | 1.50 | | 5.3 | 5.3 | 28 | | 0.001 | 42 | 0.001 |
| | 1.60 | | 25.7 | 15.3 | 394 | | 0.009 | 60 | 0.001 |
| | 1.70 | | 46.1 | 25.3 | 1,168 | | 0.027 | 135 | 0.003 |
| | 1.80 | | 66.5 | 35.3 | 2,349 | | 0.054 | 307 | 0.007 |
| | 1.90 | | 86.9 | 45.3 | 3,939 | | 0.090 | 618 | 0.014 |
| | 2.00 | | 107.3 | 55.3 | 5,937 | | 0.136 | 1,109 | 0.025 |
| | 2.10 | | 127.7 | 65.3 | 8,342 | | 0.192 | 1,819 | 0.042 |
| | 2.20 | | 148.1 | 75.3 | 11,156 | | 0.256 | 2,791 | 0.064 |
| | 2.30 | | 168.5 | 85.3 | 14,378 | | 0.330 | 4,064 | 0.093 |
| | 2.40 | | 188.9 | 95.3 | 18,007 | | 0.413 | 5,680 | 0.130 |
| Floor | 2.47 | | 203.2 | 102.3 | 20,791 | | 0.477 | 7,037 | 0.162 |
| | 2.50 | | 203.4 | 102.6 | 20,864 | | 0.479 | 7,661 | 0.176 |
| Zone 1 (WQCV) | 2.59 | | 204.2 | 103.3 | 21,085 | | 0.484 | 9,549 | 0.219 |
| | 2.60 | | 204.2 | 103.4 | 21,110 | | 0.485 | 9,760 | 0.224 |
| | 2.70 | | 205.0 | 104.2 | 21,356 | | 0.490 | 11,883 | 0.273 |
| | 2.80 | | 205.8 | 105.0 | 21,604 | | 0.496 | 14,031 | 0.322 |
| | 2.90 | | 206.6 | 105.8 | 21,854 | | 0.502 | 16,204 | 0.372 |
| | 3.00 | | 207.4 | 106.6 | 22,104 | | 0.507 | 18,402 | 0.422 |
| | 3.10 | | 208.2 | 107.4 | 22,356 | | 0.513 | 20,625 | 0.473 |
| | 3.20 | | 209.0 | 108.2 | 22,609 | | 0.519 | 22,874 | 0.525 |
| | 3.30 | | 209.8 | 109.0 | 22,864 | | 0.525 | 25,147 | 0.577 |
| | 3.40 | | 210.6 | 109.8 | 23,119 | | 0.531 | 27,446 | 0.630 |
| | 3.50 | | 211.4 | 110.6 | 23,376 | | 0.537 | 29,771 | 0.683 |
| Zone 2 (EURV) | 3.57 | | 212.0 | 111.1 | 23,557 | | 0.541 | 31,414 | 0.721 |
| | 3.60 | | 212.2 | 111.4 | 23,634 | | 0.543 | 32,122 | 0.737 |
| | 3.70 | | 213.0 | 112.2 | 23,894 | | 0.549 | 34,498 | 0.792 |
| | 3.80 | | 213.8 | 113.0 | 24,155 | | 0.555 | 36,900 | 0.847 |
| | 3.90 | | 214.6 | 113.8 | 24,417 | | 0.561 | 39,329 | 0.903 |
| | 4.00 | | 215.4 | 114.6 | 24,680 | | 0.567 | 41,784 | 0.959 |
| | 4.10 | | 216.2 | 115.4 | 24,945 | | 0.573 | 44,265 | 1.016 |
| | 4.20 | | 217.0 | 116.2 | 25,211 | | 0.579 | 46,773 | 1.074 |
| | 4.30 | | 217.8 | 117.0 | 25,478 | | 0.585 | 49,307 | 1.132 |
| | 4.40 | | 218.6 | 117.8 | 25,746 | | 0.591 | 51,868 | 1.191 |
| Zone 3 (100-year) | 4.50 | | 219.4 | 118.6 | 26,016 | | 0.597 | 54,457 | 1.250 |
| | 4.60 | | 220.2 | 119.4 | 26,287 | | 0.603 | 57,072 | 1.310 |
| | 4.70 | | 221.0 | 120.2 | 26,560 | | 0.610 | 59,714 | 1.371 |
| | 4.80 | | 221.8 | 121.0 | 26,833 | | 0.616 | 62,384 | 1.432 |
| | 4.90 | | 222.6 | 121.8 | 27,108 | | 0.622 | 65,081 | 1.494 |
| | 5.00 | | 223.4 | 122.6 | 27,384 | | 0.629 | 67,805 | 1.557 |
| | 5.10 | | 224.2 | 123.4 | 27,662 | | 0.635 | 70,558 | 1.620 |
| | 5.20 | | 225.0 | 124.2 | 27,940 | | 0.641 | 73,338 | 1.684 |
| | 5.30 | | 225.8 | 125.0 | 28,220 | | 0.648 | 76,146 | 1.748 |
| | 5.40 | | 226.6 | 125.8 | 28,502 | | 0.654 | 78,982 | 1.813 |
| | 5.50 | | 227.4 | 126.6 | 28,784 | | 0.661 | 81,846 | 1.879 |
| | 5.60 | | 228.2 | 127.4 | 29,068 | | 0.667 | 84,739 | 1.945 |
| | 5.70 | | 229.0 | 128.2 | 29,353 | | 0.674 | 87,660 | 2.012 |
| | 5.80 | | 229.8 | 129.0 | 29,640 | | 0.680 | 90,609 | 2.080 |
| | 5.90 | | 230.6 | 129.8 | 29,927 | | 0.687 | 93,588 | 2.148 |
| | 6.00 | | 231.4 | 130.6 | 30,216 | | 0.694 | 96,595 | 2.218 |
| | 6.10 | | 232.2 | 131.4 | 30,506 | | 0.700 | 99,631 | 2.287 |
| | 6.20 | | 233.0 | 132.2 | 30,798 | | 0.707 | 102,696 | 2.358 |
| | 6.30 | | 233.8 | 133.0 | 31,091 | | 0.714 | 105,791 | 2.429 |

# APPENDIX C

## Excerpts of Existing Reports

NEW DOC

J·R ENGINEERING
A Westrian Company

# PRELIMINARY DRAINAGE REPORT
# FOR
# FIRST WING DEVELOPMENT

May 2005
**Revised July 2005**

Prepared For:

**COWPERWOOD COMPANY**
6102 Broadway, Suite B-2
San Antonio, TX 78209
(210) 930-5192

Prepared By:

**JR ENGINEERING**
4310 ArrowsWest Drive
Colorado Springs, CO 80907
(719) 593-2593

Job No. 9965.10

# PRELIMINARY DRAINAGE REPORT
# FOR FIRST WING DEVELOPMENT

## PURPOSE

The purpose of this preliminary drainage report is to identify and estimate existing and proposed drainage patterns, determine storm water runoff quantities resulting from First Wing Development Filings No. 1 and 2, and to recommend proposed drainage facilities within the development. Additionally, this report will show that there will be no impacts from this development downstream.

## GENERAL DESCRIPTION

The proposed First Wing Development occupies a 37.0-acre site in El Paso County in the north half of the northwest quarter of Section 17, Township 14 South, Range 65 West of the Sixth Principal Meridian in the County of El Paso. The site is bounded on the northwest by an existing retail development, on the north by Space Village Road, on the west by Peterson Road, and on the east by undeveloped land owned by the city of Colorado Springs. Peterson Air Force Base borders the south side of this site. First Wing Development has been planned in two filings; Filing No. 1 occupies the western-most 14 acres of the site and will be developed in two phases. The first phase will be the 6.9-acre Cowperwood SAIC site that will be developed immediately; the remaining second phase will be developed at some indefinite point in the future. Filing No. 2 occupies the eastern-most 23 acres and will be developed at some indefinite point in the future. (See VICINITY MAP in the Appendix).

## EXISTING DRAINAGE CONDITIONS

The First Wing Development site drains into two basins. The western-most 10 acres currently drain towards Sand Creek Basin while the remaining 27 acres drain to Peterson Air Field Basin. Existing drainage flows overland to the southern boundary of the site and onto Peterson Air Force Base. There are no existing drainage facilities on-site. (See EXISTING DRAINAGE MAP in the Appendix).

Basin OS-3 encompasses the 0.7 acres of Space Village from the high point north of Filing No. 1 to the ridgeline that divides Filing No. 2. Drainage from this area flows south across the street section onto Filing No. 2. Properties north of Space Village drain to the north side of the road where they are conveyed in roadside ditches away from our site. Historic flows from this off-site basin are 5 cfs in the 5-year storm and 9 cfs in the 100-year storm. (See the EXISTING BASIN PARAMETERS and EXISTING HYDROLOGIC CALCULATIONS in the Appendix).

The 0.8 acres of Space Village from the ridgeline that divides Filing No. 2 to its eastern boundary comprise Basin OS-4. Drainage from this area flows south across the street section onto Filing No. 2. Properties north of Space Village drain to the north side of the road where they are conveyed in roadside ditches away from our site. Historic flows from this off-site basin are 5 cfs in the 5-year storm and 9 cfs in the 100-year storm. (See the EXISTING BASIN PARAMETERS and EXISTING HYDROLOGIC CALCULATIONS in the Appendix).

Basin EX-1 is comprised of the western 10.3 acres of Filing No. 1 and drains to the Sand Creek Drainage Basin. The land in this basin is currently undeveloped. All storm runoff flows overland to the southern boundary of the site and onto Peterson Air Force Base. (See the EXISTING BASIN PARAMETERS and EXISTING HYDROLOGIC CALCULATIONS in the Appendix).

Along the boundary of Filing No. 1, 4.4 acres make up Basin EX-2. This basin drains to the Peterson Drainage Basin, specifically to the low point in the southwest corner of Filing No. 1. The land in this basin is currently undeveloped. All storm runoff flows overland to the low point and onto Peterson Air Force Base. (See the EXISTING BASIN PARAMETERS and EXISTING HYDROLOGIC CALCULATIONS in the Appendix).

Basin EX-3 includes 11.4 acres along the boundary between the filings and the western half of Filing No. 2. This basin drains to the Peterson Drainage Basin. The land in this basin is currently undeveloped. All storm runoff flows overland to southwest corner of Filing No. 2 and onto Peterson Air Force Base. (See the EXISTING BASIN PARAMETERS and EXISTING HYDROLOGIC CALCULATIONS in the Appendix).

The eastern half of Filing No. 2 comprises Basin EX-4 (11.0 acres). This basin drains to the Peterson Drainage Basin. The land in this basin is currently undeveloped. All storm runoff flows overland to the lowpoint along the southern boundary of the site in the middle of the basin and onto Peterson Air Force Base. (See the EXISTING BASIN PARAMETERS and EXISTING HYDROLOGIC CALCULATIONS in the Appendix).

The hydrologic calculations shown in the Appendix for the existing conditions calculate the historic drainage rates of the existing drainage basins. These rates are 6 cfs for the 5-year storm and 16 cfs for the 100-year storm for basin EX-1; basin EX-2 runoff is $Q_5$ =3 cfs and $Q_{100}$ = 7 cfs; historic rates for basin EX-3 are 7 cfs and 18 cfs for the 5 and 100-year storms respectively; and basin EX-4 runoff is $Q_5$ =7 cfs and $Q_{100}$ = 18 cfs.

**PROPOSED DRAINAGE CONDITIONS**

First Wing Development Filing No. 1 is a 14-acre proposed business development. The 6.9-acre Cowperwood SAIC site will be developed immediately including one 85,000 square foot office building and the road through phase two which provides access to Space Village Drive. Development of phase two will include one 120,000 square foot office building and required parking. There are currently no plans to develop this portion of the site.

Runoff from 3.6-acre Basin A will be directed to the west pond as surface runoff and through gutter pans. These flows will enter the west pond through a curb chase located along the eastern boundary of the pond at Design Point 1 ($Q_5$ = 14cfs, $Q_{100}$ = 27 cfs). Drainage from the pond will flow offsite into the Sand Creek Basin. (See PROPOSED DRAINAGE MAP and PROPOSED HYDROLOGIC CALCULATIONS in Appendix.)

Draining flows from proposed Basin B will collect in an inlet directly south of the phase 1 building (at design point 2) and will flow overland into Pond 1 along the western boundary of the site ($Q_5$ = 10cfs, $Q_{100}$ = 19 cfs). (See PROPOSED DRAINAGE MAP and HYDROLOGIC CALCULATIONS in Appendix.)

Flows from Basin C ($Q_5$ = 4cfs, $Q_{100}$ = 8 cfs) will flow via curb and gutter to the west onto Peterson Road at DP 4.

Basin D is comprised of 6.7 acres along the eastern boundary of the site and will have developed flows of $Q_5$ = 27 cfs, $Q_{100}$ = 51 cfs. This area will be developed in the second phase of development. Developed storm runoff will drain via surface flow to pond 2, the pond in the southeast corner of Filing No. 1.

Two detention ponds will be built in Filing No. 1. Pond 1 will be built in conjunction with Phase 1; Pond 2 will be built with Phase 2. Runoff will be conveyed to the detention ponds via overland flow, channelized flows in gutter pans and swales. (See PROPOSED DRAINAGE MAP in the Appendix.) The detention ponds will restrict flows to historic rates and were sized using Haestad Methods Pond Pack software. (See Detention Pond Design below.)

The remaining 23 acres, which form Filing No. 2, will remain zoned for a heavy industrial district (PHID) including a maximum of 400,000 square feet of industrial space. There are currently no plans to plans to develop this portion of the site. Storm runoff from Filing No. 2 (Basin E) will continue to flow into Peterson Drainage Basin. A detention pond will be built in the southeast corner of the site. Runoff ($Q_5$ = 95 cfs, $Q_{100}$ = 178 cfs) will be conveyed to the detention pond (Design Point 8) via overland flows and channelized flows in gutter pans. (See PROPOSED DRAINAGE MAP and HYDROLOGIC CALCULATIONS in Appendix.) This detention pond will restrict flows to historic rates (Design Point 9) and was sized using Haestad Methods Pond Pack software. (See Detention Pond Design below.)

**DRAINAGE BASIN TRANSFERS**

Existing on-site basins EX-2, EX-3 and EX-4 flow to Peterson Drainage Basin for a total area of 26.8 acres. Only basin EX-1, area of 10.3 acres, currently flows to Sand Creek Drainage Basin. Once development of Filing No. 1 occurs, proposed basins D and E will flow to Peterson Drainage Basin. This will be a total area of 29.5 acres, for an increase of 2.7 acres from the existing tributary area. This 2.7-acre increase in tributary area will not affect the basin downstream because the detention ponds being proposed for basins D and E will restrict flows to

The detention pond in Filing No. 2 will collect drainage from proposed Basin E to be developed as part of Filing No. 2. (See the PROPOSED DRAINAGE MAP in the Appendix.) This pond was sized using Haestad Methods Pond Pack software. The necessary capacity is 3.4 acre-ft to store the developed flows of $Q_5$ = 95 cfs and $Q_{100}$ = 178 cfs (DP 8). The bottom elevation of the pond will be 6100.00 and the top of berm elevation is 6106.00. The 100-year water surface elevation is 6105.2'. Flows from the pond will outfall through an outfall structure on the south side of the pond. The flow through this structure will be restricted to the historic flows of $Q_5$ = 14 cfs and $Q_{100}$ = 36 cfs (DP 10). These flow rates represent a combination of the historic flows at design points 9 and 10. Since there will be no water exiting Filing No. 2 at design point 9, flows equal to the historic flows from Filing No. 2 onto Peterson Air Force Base will be released at design point 10.

Erosion control for flows exiting the First Wing Development and flowing onto Peterson Air Force Base will be addressed in the Final Drainage Report.

**DRAINAGE DESIGN CRITERIA**

This report has been prepared in accordance with the 1991 County Drainage Criteria Manual, revised October 1994. All proposed and existing basin flows were determined using the Rational Method. (See PROPOSED HYDROLOGIC CALCULATIONS and EXISTING HYDROLOGIC CALCULATIONS in the Appendix). All proposed drainage systems were designed to handle runoff from both the initial design storm (5 year event) and the major design storm (100 year event). All proposed culverts are 18" or greater in diameter, per El Paso County standards. Preliminary detention ponds were sized using Haestead Methods Pond Pack software.

**FLOODPLAIN STATEMENT**

The First Wing Development site is not within a designated F.E.M.A. Floodplain as determined by the Flood Insurance Rate Map, Community Panel Number 02041 CO754 F, effective date March 17, 1997. (See FLOOD INSURANCE RATE MAP OF EL PASO COUNTY in the Appendix).

# *FIRST WING*
# *PRELIMINARY DRAINAGE REPORT*
## *(Area Runoff Summary)*

| | | Historic Weighted | | Historic Weighted | |
|---|---|---|---|---|---|
| BASIN | TOTAL AREA (Acres) | C(5) | C(100) | CA(5) | CA(100) |
| EX-1 | 10.3 | 0.25 | 0.35 | 2.57 | 3.60 |
| EX-2 | 4.4 | 0.25 | 0.35 | 1.11 | 1.55 |
| EX-3 | 11.4 | 0.25 | 0.35 | 2.86 | 4.00 |
| EX-4 | 11.0 | 0.25 | 0.35 | 2.76 | 3.86 |
| OS-1 | 0.6 | 0.90 | 0.95 | 0.53 | 0.56 |
| OS-2 | 9.8 | 0.71 | 0.78 | 7.01 | 7.64 |
| OS-3 | 0.7 | 0.90 | 0.95 | 0.67 | 0.71 |
| OS-4 | 0.8 | 0.90 | 0.95 | 0.71 | 0.75 |

# *FIRST WING PRELIMINARY DRAINAGE REPORT*
## *(Proposed Area Runoff Summary)*

| | | *WEIGHTED* | | *WEIGHTED* | | *Historic Weighted* | | *Historic Weighted* | |
|---|---|---|---|---|---|---|---|---|---|
| BASIN | TOTAL AREA *(Acres)* | C(5) | C(100) | CA(5) | CA(100) | C(5) | C(100) | CA(5) | CA(100) |
| *A* | 3.6 | 0.77 | 0.83 | 2.79 | 3.00 | 0.25 | 0.35 | 0.90 | 1.26 |
| *B* | 2.6 | 0.74 | 0.80 | 1.92 | 2.08 | 0.25 | 0.35 | 0.65 | 0.91 |
| *C* | 1.4 | 0.76 | 0.82 | 1.06 | 1.15 | 0.25 | 0.35 | 0.35 | 0.49 |
| *D* | 6.7 | 0.78 | 0.84 | 5.25 | 5.65 | 0.25 | 0.35 | 1.68 | 2.35 |
| *E* | 22.8 | 0.90 | 0.95 | 20.54 | 21.68 | 0.25 | 0.35 | 5.71 | 7.99 |

# *FIRST WING*
# *PRELIMINARY DRAINAGE REPORT*
## *(Area Drainage Summary)*

| | | WEIGHTED | | OVERLAND | | | | STREET / CHANNEL FLOW | | | | Tc | INTENSITY | | TOTAL FLOWS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BASIN | AREA TOTAL | C(5) | C(100) | C(5) | Length | Height | Tc | Length | Slope | Velocity | Tc | TOTAL | I(5) | I(100) | Q(5) | Q(100) |
| | (Acres) | | | | (ft) | (ft) | (min) | (ft) | (%) | (fps) | (min) | (min) | (in/hr) | (in/hr) | (c.f.s.) | (c.f.s.) |
| EX-1 | 10.3 | 0.25 | 0.35 | 0.25 | 825 | 32 | 29.2 | 0<br>0 | 10.0%<br>4.0% | 11.1<br>7.0 | 0.0<br>0.0 | 29.2 | 2.5 | 4.4 | 6 | 16 |
| EX-2 | 4.4 | 0.25 | 0.35 | 0.25 | 765 | 32 | 27.4 | 0 | 12.0% | 12.1 | 0.0 | 27.4 | 2.5 | 4.5 | 3 | 7 |
| EX-3 | 11.4 | 0.25 | 0.35 | 0.25 | 765 | 32 | 27.4 | | | | | 27.4 | 2.5 | 4.5 | 7 | 18 |
| EX-4 | 11.0 | 0.25 | 0.35 | 0.25 | 765 | 32 | 27.4 | | | | | 27.4 | 2.5 | 4.5 | 7 | 18 |
| OS-1 | 0.6 | 0.90 | 0.95 | | | | | 450 | 3.1% | 6.2 | 1.2 | 1.2 | 6.4 | 11.3 | 3 | 6 |
| OS-2 | 9.8 | 0.71 | 0.78 | | | | | 1750 | 1.1% | 3.7 | 7.9 | 7.9 | 4.5 | 7.9 | 31 | 61 |
| OS-3 | 0.7 | 0.90 | 0.95 | | | | | 50 | 2.0% | 4.9 | 0.2 | 0.2 | 6.9 | 12.2 | 5 | 9 |
| OS-4 | 0.8 | 0.90 | 0.95 | | | | | 50 | 2.0% | 4.9 | 0.2 | 0.2 | 6.9 | 12.2 | 5 | 9 |

# *FIRST WING*
# *PRELIMINARY DRAINAGE REPORT*
## *(Area Drainage Summary)*

| | | WEIGHTED | | OVERLAND | | | | STREET / CHANNEL FLOW | | | | Tc | INTENSITY | | TOTAL FLOWS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BASIN | AREA TOTAL | C(5) | C(100) | C(5) | Length | Height | Tc | Length | Slope | Velocity | Tc | TOTAL | I(5) | I(100) | Q(5) | Q(100) |
| | (Acres) | | | | (ft) | (ft) | (min) | (ft) | (%) | (fps) | (mins) | (min) | (in/hr) | (in/hr) | (c.f.s.) | (c.f.s.) |
| A NW | 3.6 | 0.77 | 0.83 | 0.77 | | | | 575 | 1.6% | 4.4 | 2.2 | 5.0 | 5.1 | 9.1 | 14 | 27 |
| B SE | 2.6 | 0.74 | 0.80 | 0.74 | | | | 460 | 1.5% | 4.3 | 1.8 | 5.0 | 5.1 | 9.1 | 10 | 19 |
| C SOUTH | 1.4 | 0.76 | 0.82 | 0.76 | | | | 300 | 1.0% | 3.5 | 1.4 | 5.0 | 5.1 | 9.1 | 5 | 10 |
| D PHASE 2 | 6.7 | 0.78 | 0.84 | 0.78 | | | | 300 | 1.0% | 3.5 | 1.4 | 5.0 | 5.1 | 9.1 | 27 | 51 |
| E FILING 2 | 22.8 | 0.90 | 0.95 | 0.90 | | | | 1500 | 1.0% | 3.5 | 7.1 | 7.1 | 4.6 | 8.2 | 95 | 178 |

# *FIRST WING PRELIMINARY DRAINAGE REPORT*
## *(Existing Flows at Design Points)*

| *Historic Flows* | | | | | *Intensity* | | *Flow* | |
|---|---|---|---|---|---|---|---|---|
| *Design Point(s)* | *Contributing Basins* | *Equivalent CA(5)* | *Equivalent CA(100)* | *Maximum Tc* | *I(5)* | *I(100)* | *Q(5)* | *Q(100)* |
| *5* | OS-1, EX-1 | 3.10 | 4.15 | 29.19 | 2.5 | 4.4 | *8* | *18* |
| *7* | EX-2 | 1.11 | 1.55 | 27.4 | 2.5 | 4.5 | *3* | *7* |
| *9* | EX-3 | 2.86 | 4.00 | 27.4 | 2.5 | 4.5 | *7* | *18* |
| *10* | EX-4 | 2.76 | 3.86 | 27.4 | 2.5 | 4.5 | *7* | *18* |
| *11* | OS-2 | 7.01 | 7.64 | 7.9 | 4.5 | 7.9 | *31* | *61* |

# *FIRST WING PRELIMINARY DRAINAGE REPORT*
## *(Developed Flows at Design Points)*

| *Developed Flows* | | | | | *Intensity* | | *Flow* | |
|---|---|---|---|---|---|---|---|---|
| *Design Point(s)* | *Contributing Basins* | *Equivalent CA(5)* | *Equivalent CA(100)* | *Maximum Tc* | *I(5)* | *I(100)* | *Q(5)* | *Q(100)* |
| *1* | A | 2.79 | 3.00 | 5.00 | 5.1 | 9.1 | *14* | *27* |
| *2* | B | 1.92 | 2.08 | 5.00 | 5.1 | 9.1 | *10* | *19* |
| *3* | Phase 1 Detention Pond | | | | | | *2* | *8* |
| *4* | C | 1.06 | 1.15 | 5.00 | 5.1 | 9.1 | *5* | *10* |
| *5* | Design points 3 & 4 | | | | | | *8* | *18* |
| *6* | D | 5.25 | 5.65 | 5.00 | 5.1 | 9.1 | *27* | *51* |
| *7* | Phase 2 Detention Pond | | | | | | *3* | *7* |
| *8* | E | 20.54 | 21.68 | 7.14 | 4.6 | 8.2 | *95* | *178* |
| *10* | Filing No. 2 Detention Pond | | | | | | *14* | *36* |
| *11* | OS-2: Flows along Peterson Road | 7.01 | 7.64 | 7.95 | 4.5 | 7.9 | *31* | *61* |

# COWPERWOOD SAIC

COUNTY OF EL PASO, STATE OF COLORADO

# PROPOSED DRAINAGE MAP

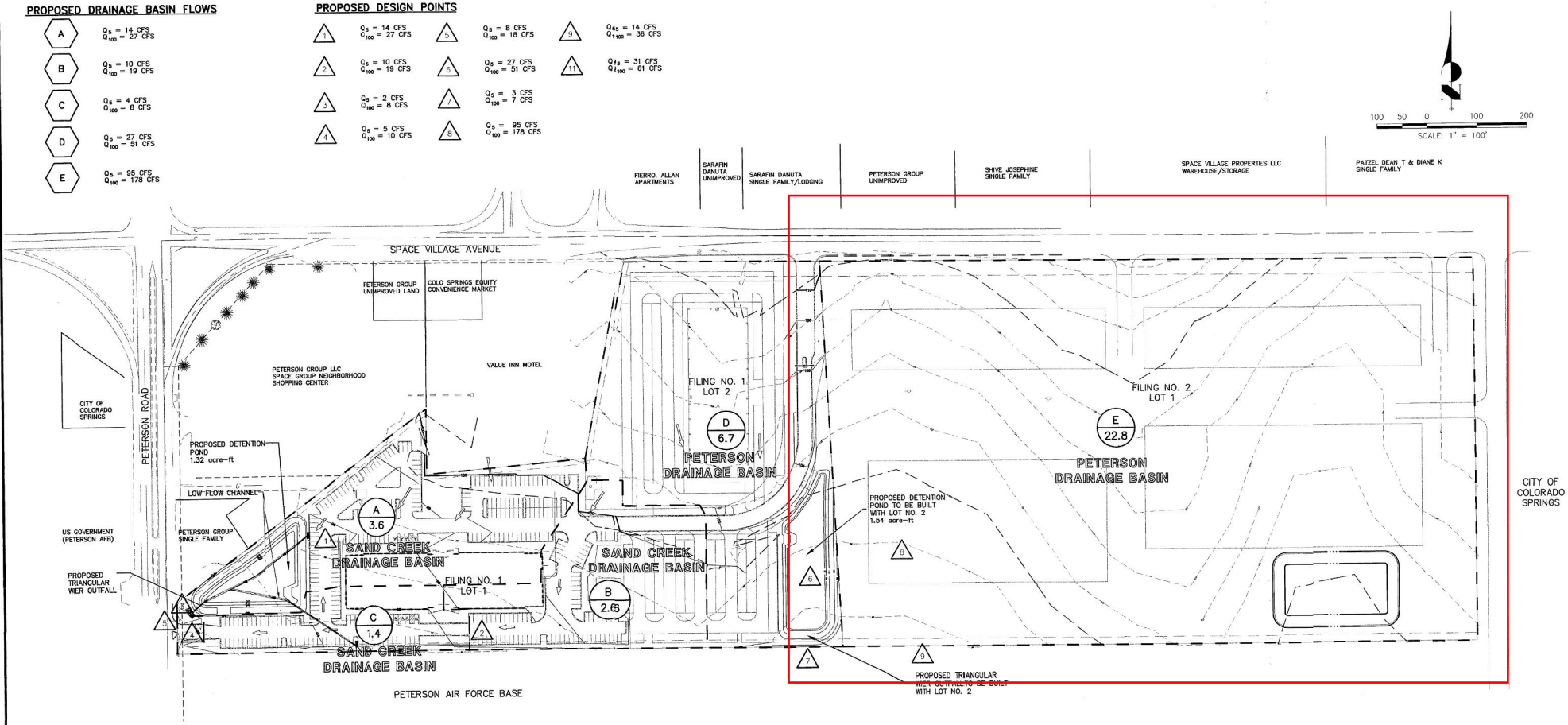
JULY 2005

**PROPOSED DRAINAGE BASIN FLOWS**

| | |
|---|---|
| A | $Q_5$ = 14 CFS, $Q_{100}$ = 27 CFS |
| B | $Q_5$ = 10 CFS, $Q_{100}$ = 19 CFS |
| C | $Q_5$ = 4 CFS, $Q_{100}$ = 8 CFS |
| D | $Q_5$ = 27 CFS, $Q_{100}$ = 51 CFS |
| E | $Q_5$ = 95 CFS, $Q_{100}$ = 178 CFS |

**PROPOSED DESIGN POINTS**

| | | | | | |
|---|---|---|---|---|---|
| 1 | $Q_5$ = 14 CFS, $Q_{100}$ = 27 CFS | 5 | $Q_5$ = 8 CFS, $Q_{100}$ = 18 CFS | 9 | $Q_{55}$ = 14 CFS, $Q_{T100}$ = 36 CFS |
| 2 | $Q_5$ = 10 CFS, $Q_{100}$ = 19 CFS | 6 | $Q_5$ = 27 CFS, $Q_{100}$ = 51 CFS | 11 | $Q_{55}$ = 31 CFS, $Q_{T100}$ = 61 CFS |
| 3 | $Q_5$ = 2 CFS, $Q_{100}$ = 8 CFS | 7 | $Q_5$ = 3 CFS, $Q_{100}$ = 7 CFS | | |
| 4 | $Q_5$ = 5 CFS, $Q_{100}$ = 10 CFS | 8 | $Q_5$ = 95 CFS, $Q_{100}$ = 178 CFS | | |





UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, JR ENGINEERING APPROVES THE USE OF THESE DRAWINGS FOR CONSTRUCTION PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.


PREPARED FOR
COWPERWOOD COMPANY
6102 BROADWAY, SUITE B-2
SAN ANTONIO, TX 78209


JR ENGINEERING
A Westrian Company
4291 Arrowswest Drive • Colorado Springs, CO 80907
719-593-2593 • Fax 719-593-2594


| BY | DATE |
|---|---|
| | |

| No. | REVISION |
|---|---|
| | |

| | |
|---|---|
| HI-SCALE | 1"=100' |
| V-SCALE | N/A |
| DATE | 3/11/05 |
| DESIGNED BY | AMH |
| DRAWN BY | AMH |

COWPERWOOD SAIC

PRELIMINARY DRAINAGE REPORT

PROPOSED DRAINAGE MAP

SHEET 1 OF 2

JOB NO. 29965.20

# COWPERWOOD SAIC

COUNTY OF EL PASO, STATE OF COLORADO

# EXISTING DRAINAGE MAP

JULY 2005

**EXISTING DRAINAGE BASIN FLOWS**

| | |
|---|---|
| EX-1 | $Q_5$ = 6 CFS, $Q_{100}$ = 16 CFS |
| EX-2 | $Q_5$ = 3 CFS, $Q_{100}$ = 7 CFS |
| EX-3 | $Q_5$ = 7 CFS, $Q_{100}$ = 18 CFS |
| EX-4 | $Q_5$ = 7 CFS, $Q_{100}$ = 18 CFS |

**DESIGN POINT SUMMARY**

| | |
|---|---|
| 5 | $Q_5$ = 8 CFS, $Q_{100}$ = 18 CFS |
| 7 | $Q_5$ = 3 CFS, $Q_{100}$ = 7 CFS |
| 9 | $Q_5$ = 7 CFS, $Q_{100}$ = 18 CFS |
| 10 | $Q_5$ = 7 CFS, $Q_{100}$ = 18 CFS |
| 11 | $Q_5$ = 31 CFS, $Q_{100}$ = 61 CFS |

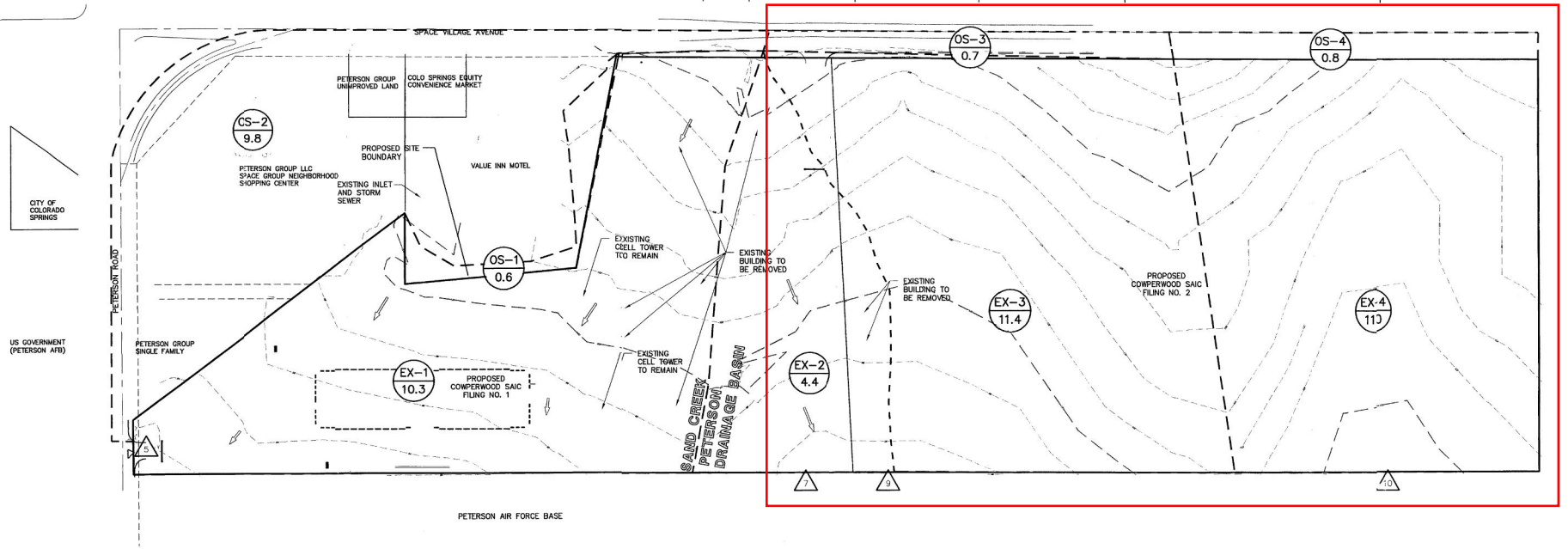
**LEGEND**

| DESCRIPTION | SYMBOL |
|---|---|
| BASIN IDENTIFIER / AREA IN ACRES | EX-1 / 6.7 |
| DESIGN POINT | 7 |
| EXISTING DRAINAGE ARROW | |
| EXISTING GROUND CONTOUR | |
| EXISTING DRAINAGE BOUNDARY | |

N

100 50 0 100 200

SCALE: 1" = 100'




UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE ENGINEERING AUTHORITY, J.R. ENGINEERING APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR
COWPERWOOD COMPANY
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www.jrengineering.com

| No. | REVISION | BY | DATE |
|---|---|---|---|
| | | | |

| | |
|---|---|
| H-SCALE | 1"=100' |
| V-SCALE | N/A |
| DATE | 3/11/05 |
| DESIGNED BY | AMH |
| DRAWN BY | AMH |
| CHECKED BY | |

COWPERWOOD SAIC

PRELIMINARY DRAINAGE REPORT

EXISTING DRAINAGE MAP

SHEET 2 OF 2

JOB NO. 29965.20

# ADDENDUM TO DRAINAGE LETTER

# HIGHWAY 24 EASTGATE BUSINESS PARK

A REPLAT OF LOT 3, HILLCREST ACRES

November 20, 2008

Revised
December 29, 2008

Revised
January 8, 2009

Revised
December 5, 2011

Prepared for

LACA-LOJA LLP

Oliver E. Watts, Consulting Engineer, Inc.
Colorado Springs, Colorado

RECEIVED
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EPC DEVELOPMENT SERVICES

VR-08-012

**OLIVER E. WATTS, PE-LS**
OLIVER E. WATTS, CONSULTING ENGINEER, INC.
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COLORADO SPRINGS, COLORADO 80907
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fax (719) 265-9660
olliewatts@aol.com

December 5, 2011

El Paso County D.O.T.
3460 Marksheffel Road
Colorado Springs, CO 80922

ATTN: Paul Danley

SUBJECT: Addendum to Drainage Letter
Highway 24 Eastgate Business Park

Gentlemen

Transmitted herewith for your review and approval is the addendum to the drainage letter for the Highway 24 Eastgate Business Park, which is a replat of Lot 3, Hillcrest Acres. The original drainage letter was dated January 28, 2005, and was approved by the County Engineer on February 7, 2005. This addendum revises the water quality outlet in the existing detention pond to a standard CDOT inlet box, similar to those used on the recent COSMIX project.

There will be no change in the approved runoff as a result of this subdivision. Please contact our office if we may provide any further information.

Oliver E. Watts, Consulting Engineer, Inc.

BY: _____
Oliver E. Watts, President

Encl:
Drainage Letter 3 pages
Computations, 5 Pages
SCS Soils Map and Interpretation Sheet
Backup Information, 3 pages
Drainage Plan, Dwg 04-3486-07
Detention Pond Details, Dwg 04-3486-11

## 1. ENGINEER'S STATEMENT:

The attached drainage plan and report were prepared under my direction and supervision and are correct to the best of my knowledge and belief. Said drainage report has been prepared according to the criteria established by the County for drainage reports and said report is in conformity with the applicable master plan of the drainage basin. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparing this report.

Oliver E. Watts, Consulting Engineer, Inc.

OLIVER E. WATTS REGISTERED 9853 COLO. P.E. & L.S. STATE OF COLORADO

Oliver E. Watts Colo. PE-LS No. 9853

## 2. OWNERS / DEVELOPER'S STATEMENT:

I the owner / developer have read and will comply with all of the requirements specified in this drainage report and plan.

Laca-Loja, LP

By: _____

James Whidden
P.O. Box 75903
Colorado Springs, CO 80970
492-5001

## 3. EL PASO COUNTY:

Filed in accordance with the requirements of the El Paso Land Development Code, Drainage Criteria Manual Volumes 1 and 2, and the Engineering Criteria Manual, as amended.

_____ 12-20-11

Andre P. Brackin, P.E., date
County Engineer / ECM Administrator

Conditions:

## 4. LOCATION AND DESCRIPTION:

The Highway 24 Eastgate Business Park is a replat of Lot 3, Hillcrest Acres, and is located on the north side of Space Village Boulevard East of Peterson Road and South of Highway 24, as shown on the enclosed drainage plan. An approved drainage report is on file for Lots 2 and 3, Hillcrest Acres, as prepared by Professional Consultants, Inc., June, 2002. This report will accompany the replat of Lot 3 and the associated development plan so that a number of storage buildings may be constructed on Lot 3. Condominium plats will be prepared as the units are constructed, as required by El Paso County. The drainage for Lot 3 is associated with the detention pond on Lot 2, the capacity for which is analyzed as part of this report. The pond exists and the details of the design are not part of this report

This subdivision lies within the boundaries of the Peterson Field Drainage Basin. This report complies with the requirements of the Master Plan for that basin.

## 5. METHOD AND CRITERIA:

The criteria used for all computations in this report are that specified in the City County Drainage Criteria Manual. All computations are enclosed for reference and review.

The soils in this subdivision have been mapped by the local office of the USDA/SCS and a copy of their soils map and interpretation sheet are enclosed. All soils within the drainage basins associated with this report are of hydrologic group "A".

## 6. DESCRIPTION OF RUNOFF:

Basin "A" shown on the enclosed drainage plan comprises this lot and the area south of the centerline of Highway 24 that flows into it. The inflow will be of a sheet flow type until the driveways serving the storage units are encountered, which will have an inverted crown typical of all similar storage units, in which the runoff will be channelized. The runoff will be routed to the end of the existing asphalt driveways at the northerly end of Lot 2, where a total of 19.5 cfs / 35.3 cfs (5-year / 100-year runoffs) will discharge into Lot 2. The normal grading of the driveways will accommodate this runoff as shown on the enclosed computation sheets, any one of which would accommodate the total. This runoff will be routed to the existing detention pond in Lot 2 by existing driveways through an existing concrete pan off of the driveway adjacent to the ponds. The easterly half of Lot 2 is presently constructed, including the detention pond and outfall facilities. The above runoff will be combined with that of Lot 2 (Basin "B"), including the anticipated developed runoff from the westerly portion, and a total of 31.9 cfs / 58.0 cfs will outfall into the detention pond.

The design for the detention pond was approved with the drainage report for Lots 2 and 3, Hillcrest Acres and is not part of this report. A check on the capacity of this pond is computed, and it is determined that a total of 23,900 cubic feet of detention would be required to mitigate the total development of these two lots to the 100-year historic runoff value of 6.2 cfs / 20.9 cfs, as shown on the enclosed computations. According to the referenced drainage report for Lots 2 and 3, Hillcrest Acres, a total detention of 44,072 cubic feet is available, more that adequate to accommodate this proposed development, which occurs at elevation 84.30 in the existing pond. The pond has also been checked for the capacity of the two year storm, and found more than adequate. The water surface elevations for these storms are shown on the drainage plan.

There will be no negative impact to offsite properties as a result of this development.

The site has been graded for some time to accommodate this proposed development and only finish grading remains, which is less than one acre of disturbance. Therefore a temporary sediment basin and State permit will not be required. The BMP's related to the finish grading and the below described work are shown on the design drawings.

## 7. Water Quality Detention

The existing detention pond was surveyed and the enclosed storage sheet was developed in accordance with Volume 2 of the Drainage Criteria Manual. Enclosed is a computation sheet for a sand filter basin. The required detention for water quality for the entire site is 0.264 AF (11,500 CF), which occurs at elevation 82.93. Riprap is added to each of the three inlet slabs and to the outlet of the pond outlet pipe. A standard CDOT outlet structure with a trash rack and perforated orifice plate will be added at the inlet to the existing pond outlet pipe. This will provide added staging of the design runoff for additional benefit to downstream properties. The details of the pond design are shown on the enclosed sheet.

## 8. Fees

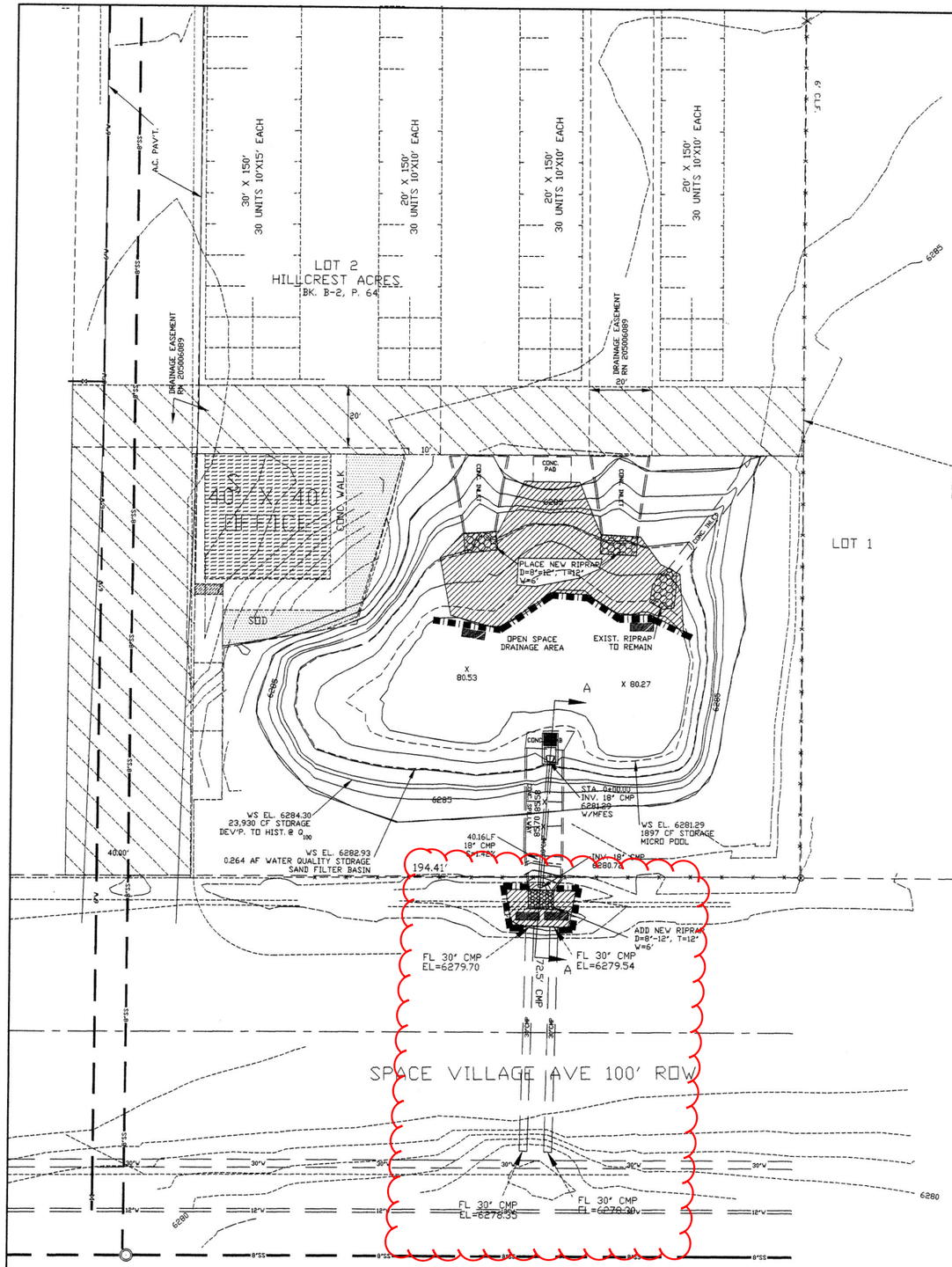
The Commissioners determined in their meeting of January 8, 2009 that drainage fees would be due as part of the subdivision process. It was also agreed that 2008 fees would be computed, and that 50% of the construction cost for the detention pond would be credited against the fees. The fees have been paid as follows.

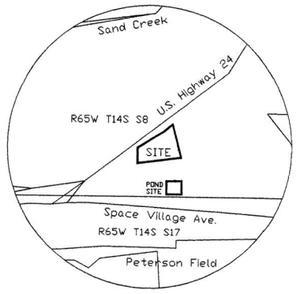
Total area = 4.54 acres x (70% impervious – 11% SF impervious)
2008 Fees: Drainage: 4.54X0.59X $9232.00 = **$ 24,728**
Bridge: 4.54X0.59X $ 700 = **$ 1,875**

Detention Pond Cost Estimate:

| Item No. | Description | Quantity | Unit Cost | Cost |
|---|---|---|---|---|
| 1 | Existing Pond Earthwork | 240 CY | $ 3.00 | $ 720.00 |
| 2 | Existing Concrete Inlets & Spillway | 1603 SF | 5.00 | 8015.00 |
| 3 | Existing 18" CMP outlet | 40 LF | 25.00 | 1000.00 |
| 4 | Proposed Riprap | 1 CY | 100.00 | 100.00 |
| 5 | Proposed Pond Outlet | 1 EA | 3000.00 | 3000.00 |
| | Subtotal Construction Cost | | | $12835.00 |
| | Engineering | | 10% | 1283.50 |
| | Total Estimated Cost | | | $14118.50 |

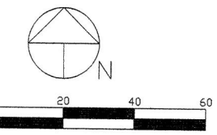
Net Drainage Fees Due: $ 24,728 - 50% x 12,835.00 = **$ 18,310.50**
Total Bridge Fees Due: **$1875.00**
**Total fees due:** **$20,185.50**




VICINITY MAP

1"=1000'



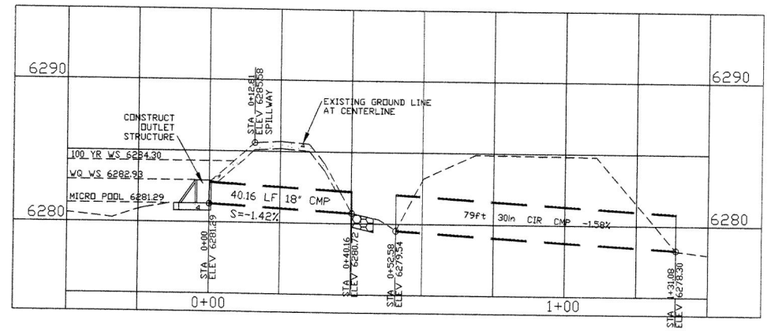

Scale 1" = 20'

Contour Interval: 1'

NGVD, 1929 ADJUSTMENT

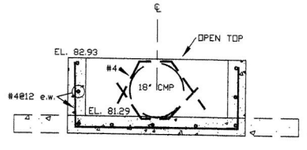
LEGEND:

- ⊗ FOUND 1/2" IRON PIPE
- □ FOUND 1-1/4" AL. CAP, #19620 ON #5 REBAR
- ⊕ FOUND CDOT 3-1/4" AL. CAP, #25361

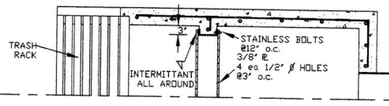



SECTION A-A
STORM SEWER OUTFALL

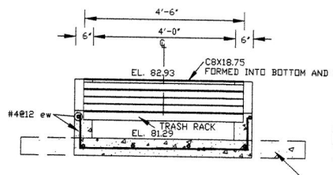
SCALE:
H: 1"=20'
V: 1"=5'



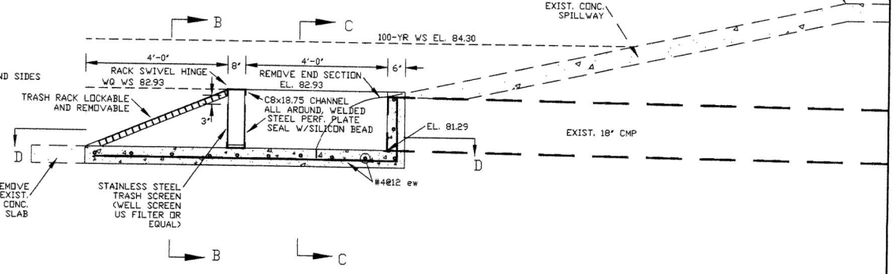

SECTION C-C




SECTION D-D




SECTION B-B

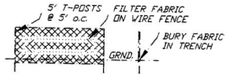



OUTLET STRUCTURE

1/2"=1'-0"

SILT DAM

1/8" = 1'-0"




SILT FENCE

1/8" = 1'0"

EROSION CONTROL LEGEND:

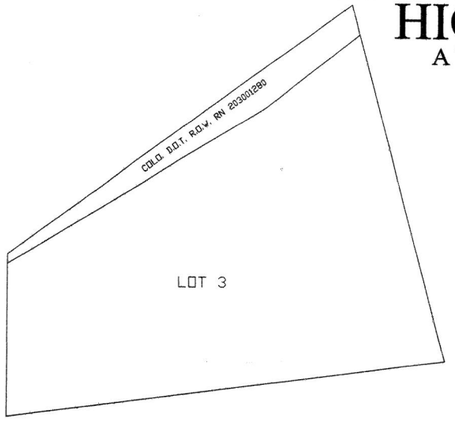
- SILT FENCE
- SILT DAM
- RESEEDED AREAS (ALL DISTURBED AREAS IN ADDITION TO THOSE SHOWN) USE EL PASO DOT STD. SEED MIX. POND BOTTOM NOT TO BE RESEEDED BUT REGRADED SMOOTH

Prepared by the office of:
Oliver E. Watts, Consulting Engineer, Inc.
614 Elkton Drive
Colorado Springs, CO 80907
(719) 593-0173
OllieWatts@aol.com

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: O.E. WATTS | APPROVED BY: | REVISIONS 12-1-08 REVISED PER COUNTY COMMENTS DEW / ESW | OLIVER E. WATTS CONSULTING ENGINEER COLORADO SPRINGS | PROJECT HIGHWAY 24 EASTGATE SUBDIVISION EL PASO COUNTY, COLORADO | SHT. NAME DETENTION POND DETAILS |
| DATE: 11-6-08 | PROJ. NO. | 12-29-08 REVISED PER COUNTY COMMENTS DEW | | | SHT. NO. 1 OF 1 |
| DWG. NO.: 04-3486-11 | DWG. | | | | |
| SURVEYED BY: DEW, ESW, 11-6-08 | | | | | |

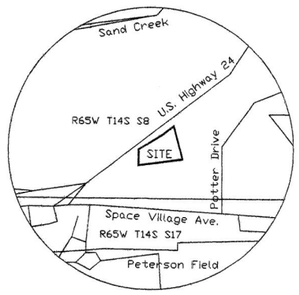
# HIGHWAY 24 EASTGATE BUSINESS PARK

## A VACATION, REPLAT AND CONDOMINIUM PLAT OF LOT 3, HILLCREST ACRES
## EL PASO COUNTY, COLORADO




AS CURRENTLY PLATTED

1"=100'




VICINITY MAP

1"=1000'

U.S. HIGHWAY NO. 24
R.O.W. VARIES
NO ACCESS, BK. 6256, P. 525
COLO. DOT. R.O.W. RN 203001289
N 58°12'53" E 425.47'
CB N 51°08'11" E
LC =166.76'
L=166.76'
R=7764.42'
Δ =01°13'50"
S 23°46'32" W
90.00'
CH 87.76'
LOT 4
FUTURE PHASE 16,250 SF
FUTURE PHASE 14,625 SF
FUTURE PHASE 12,908 SF
FUTURE PHASE 21,125 SF
LOT 1
4.54 AC.
197,671 SF
Tract A
G.C.E.
S 14°50'59" E 480.37'
7' PUBLIC UTILITY EASEMENT
N 57°26'49" E 394.61'
20' SANITARY SEWER EASEMENT
N 82°09'01" E 346.37'
20' SANITARY SEWER EASEMENT (TYP.)
30' SANITARY SEWER EASEMENT
S 68°47'06" E 47.09'
POINT
ADAMS
A=36°32'33"
R=100.00'
63.78'
N 90°00'00" E
79.74'
(PRIVATE)
30' ACCESS & EGRESS EASEMENT RN 204181690
N 80°14'04" E 206.20'
10' ELECTRICAL EASEMENT BK. (2186), PG. 844
N 83°28'05" E 150.46'
4x4 CONC.
BUILDING NO. 1
1 STORY METAL BUILDING
7578 SF
A B C D E F
S 83°32'10" W 150.20'
N 53°27'27" E
20.16'
A=40°18'25"
R=100.00'
70.35'
N 13°09'01" E
13.57'
A=45°00'43"
R=50.00'
39.28'
N 58°09'44" E
3.88'
UNPLATTED
N 00°07'23" W 220.25'
U.S. HIGHWAY 24
N 82°09'01" W 619.45'
12' EASEMENT (PLATTED)
N 00°19'00" E 27.06'
25.0'
20.00' (P)
ASSUMED BEARING BASIS OF BEARINGS
6'OPAQUE STUCCO FENCE
725
NEW BASE PK IN N AC
N 66°26'41" W 59.86'
N 22°45'19" W 101.52'
N 23°45'36" W 65.52'
N 22°45'19" W 58.98'
N 22°45'19" W 58.98'
N 22°45'19" W 58.98

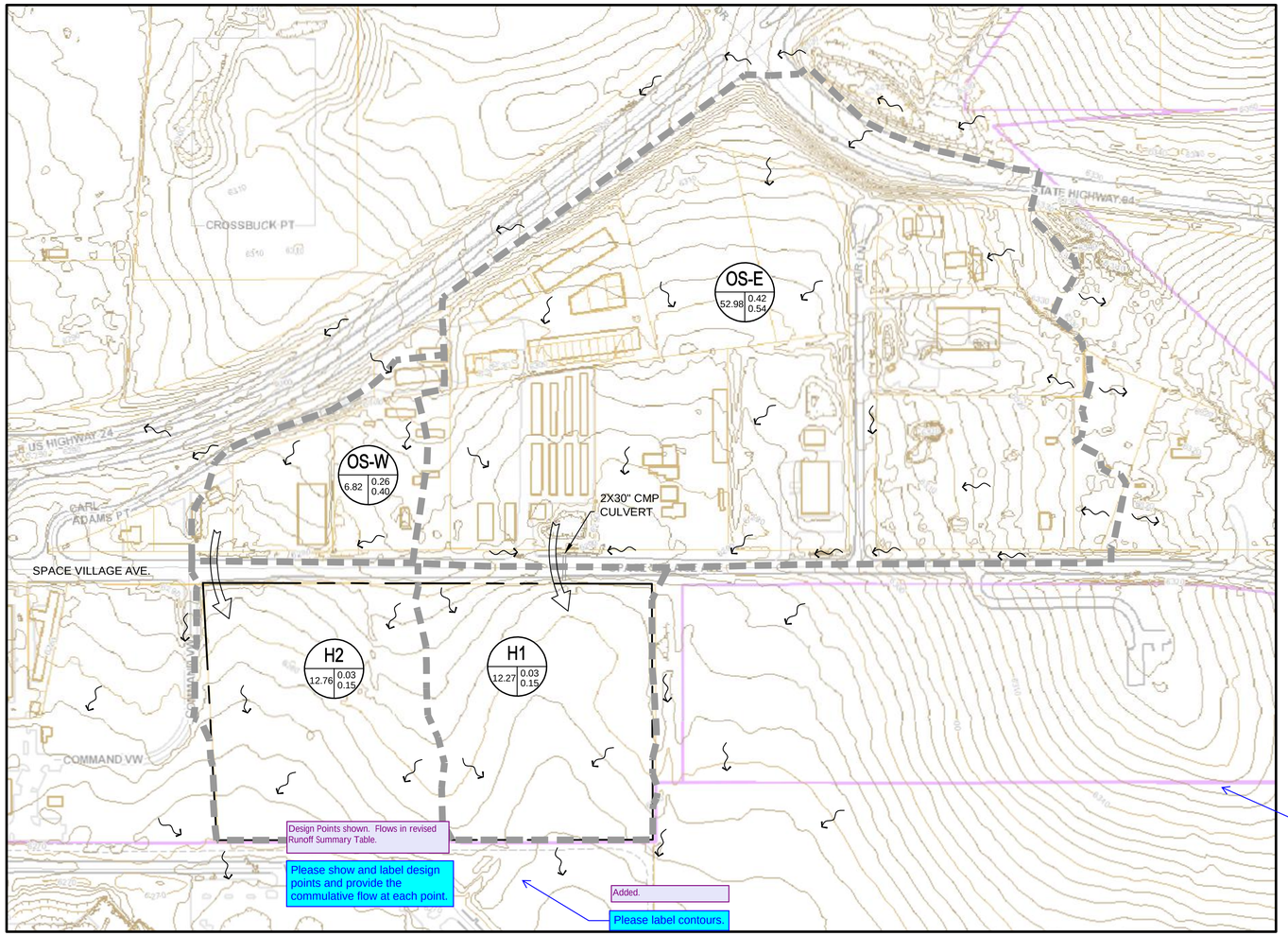
# APPENDIX D

## Drainage Maps

# 0 SPACE VILLAGE AVENUE

A PORTION OF THE NW 1/4 OF SEC. 17, T14S,
R65W, OF THE 6th P.M., EL PASO COUNTY, COLORADO
PRELIMINARY DRAINAGE PLAN

## EXISTING CONDITION & OFF-SITE




NORTH

0 100 200 400

SCALE: 1"= 200'

### LEGEND

- PROPERTY LINE
- HISTORIC BASIN LINE
- OFF-SITE BASIN CONTRIBUTION
- OS — SUBBASIN ID
- SUBBASIN AREA (ACRES): 0.12 — 0.30 5-YR RUNOFF COEFFICENT; 0.60 100-YR RUNOFF COEFFICENT

## EXISTING BASINS

### EXISTING CONDITION BASIN SUMMARY

| BASIN ID | AREA (AC) | C5 | C100 | Q5 (CFS) | Q100 (CFS) | NOTES |
|---|---|---|---|---|---|---|
| H1 | 12.27 | 0.03 | 0.15 | 0.67 | 6.04 | SHEET FLOW TO PETERSON AFB |
| H2 | 12.76 | 0.03 | 0.15 | 0.74 | 6.41 | SHEET FLOW TO PETERSON AFB |
| OS-E | 52.98 | 0.42 | 0.54 | 46.76 | 100.48 | ENTERS SITE AT 2X 30" CMP AT SV |
| OS-W | 6.82 | 0.26 | 0.40 | 4.17 | 10.91 | ROAD OVERTOPPING CONTRIBUTION |

Please use the same naming in the report for consistency.

Report describes existing basins as H1, H2, OS-E and OS-W.

Please delineate the time of concentration paths for each basin on the drainage map.

Delineated.


STERLING DESIGN ASSOCIATES
Civil Engineers | Landscape Architects
2009 W. Littleton Blvd. #300 Littleton, CO 80120
303.794.4727 | www.SterlingDesignAssociates.com


STERLING DESIGN ASSOCIATES, LLC

ISSUES & REVISIONS
NO.: 1 DATE: BY:
DESCRIPTION:
NO.: 2 DATE: - BY: -
DESCRIPTION: -
NO.: 3 DATE: - BY: -
DESCRIPTION: -
NO.: 4 DATE: - BY: -
DESCRIPTION: -
NO.: 5 DATE: - BY: -
DESCRIPTION: -
NO.: 6 DATE: - BY: -
DESCRIPTION: -

DATE: **05/12/2022**
SCALE: **1" = 20'**
PROJECT MANAGER: **JS**
PROJECT NO.: **-**
DRAWN BY: **JT**
DRAWING FILE: **-**

PROJECT:

**0 SPACE VILLAGE AVENUE**
**COLORADO SPRINGS, CO**

CLIENT:

COMMERCIAL BUILDING SERVICES
7561 S. GRANT STR., SUITE A-4
LITTLETON, COLORADO 80122

TEL: (303) 730-3001

SHEET TITLE:

**PRELIMINARY DRAINAGE PLAN**

SHEET NUMBER:

**1 OF 2**

# 0 SPACE VILLAGE AVENUE

A PORTION OF THE NW 1/4 OF SEC. 17, T14S,
R65W, OF THE 6th P.M., EL PASO COUNTY, COLORADO
PRELIMINARY DRAINAGE PLAN
PROPOSED CONDITION

Please revise drainage maps as the Grading and Erosion Control Plan shows a different design and layout.

Revised to match Grading and Erosion Control Plan.

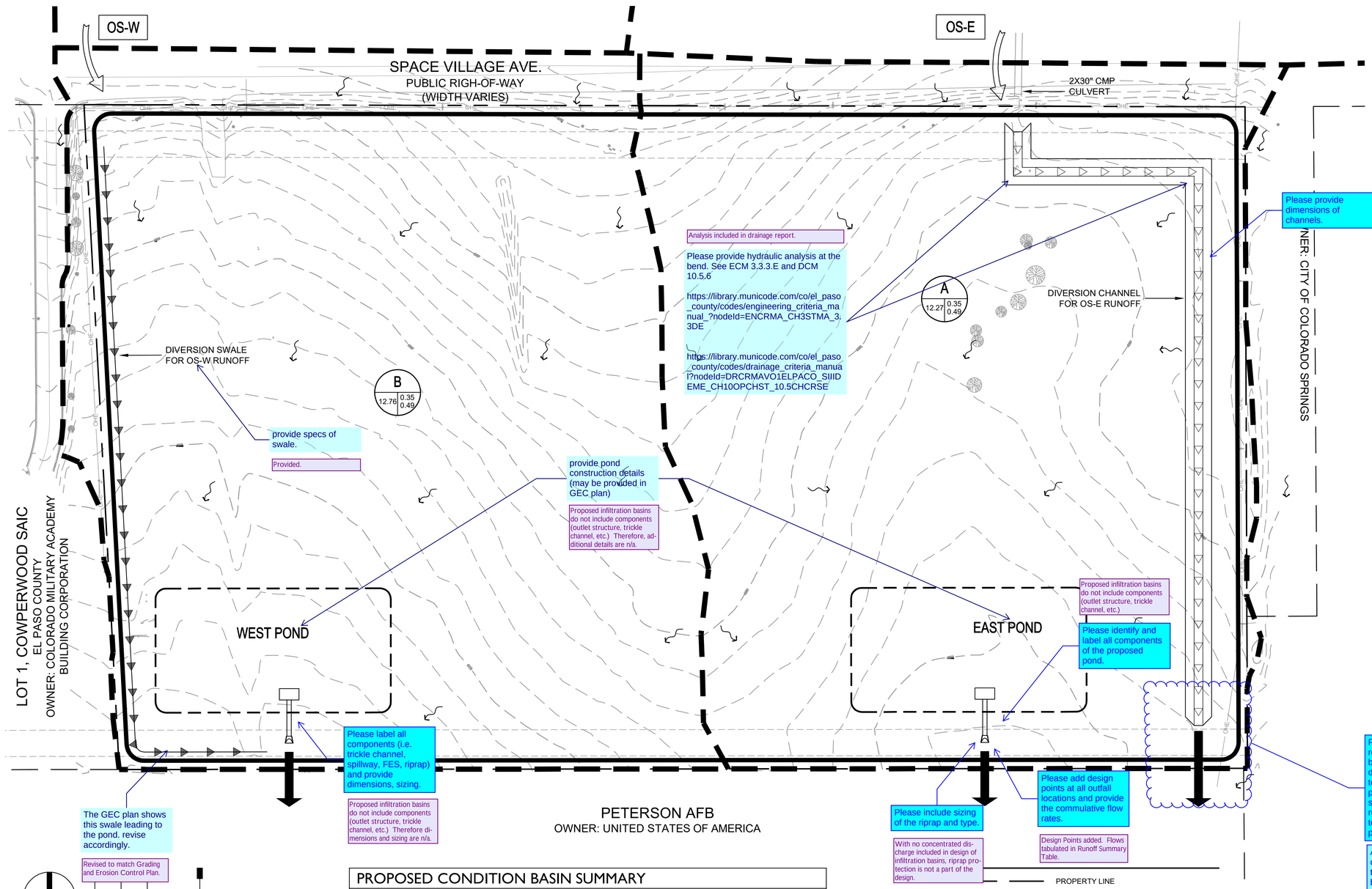
Please create a basic overview map (or modify existing drainage map) with color shading/hatching that shows areas tributary to each PBMP (pond, runoff reduction, etc) and those areas that are not treated by a PBMP, with the applicable exclusion labeled (ex: 20% up to 1ac of development can be excluded per ECM App I.7.1.C.1 and exclusions listed in ECM App I.7.1.B.#). A summary table on the current map would also be acceptable (example provided):

Table added.

PBMP SUMMARY TABLE

| BASINS | PBMP TRIBUTARY AREA (AC) | PBMP |
|---|---|---|
| A1.1 | 1.43 | RG-A1.1 |
| A3.1 | 1.87 | RG-A3.1 |
| B1,B2 | 8.60 | EDB-B |
| OA2,A2 | 0.95 | EXCLUDED* |

* EXCLUDED BASED ON < 1-ACRE OF DEVELOPED ROADWAY AREA PER ECM APP. I.7.C.1.a



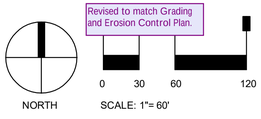

Please identify in the report why the flow is being directed in this direction instead of towards the detention pond. The contours suggest historical runoff patterns flow towards the proposed pond.

Report and drainage plan revised to match Grading and Erosion Control Plans showing channel discharging into pond.

Additionally, the channel shown on the GEC plan is being directed to the pond. Please address/revise accordingly.

Revised to match Grading and Erosion Control Plan.

Revised to match Grading and Erosion Control Plan.




## PROPOSED CONDITION BASIN SUMMARY

| BASIN ID | AREA (AC) | C5 | C100 | Q5 (CFS) | Q100 (CFS) | NOTES |
|---|---|---|---|---|---|---|
| A | 12.27 | 0.35 | 0.49 | 12.97 | 30.43 | 100-YR DETAINED <90% HISTORIC |
| B | 12.76 | 0.35 | 0.49 | 13.56 | 31.84 | 100-YR DETAINED <90% HISTORIC |
| OS-E | 52.98 | 0.42 | 0.54 | 46.76 | 100.48 | DIVERTED AROUND PERIMETER |
| OS-W | 6.82 | 0.26 | 0.40 | 4.17 | 10.91 | DIVERTED AROUND PERIMETER |

Please delineate the time of concentration paths for each basin.

Delineated.

PROPERTY LINE
PROPOSED BASIN LINE
OFF-SITE BASIN CONTRIBUTION
DISCHARGE TO OFF-SITE

OS
0.12
0.30
0.60
SUBBASIN AREA (ACRES)
SUBBASIN ID
5-YR RUNOFF COEFFICENT
100-YR RUNOFF COEFFICENT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STERLING DESIGN ASSOCIATES, LLC

ISSUES & REVISIONS
NO.: 1 DATE: BY:
DESCRIPTION:
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DESCRIPTION: -
NO.: 3 DATE: - BY: -
DESCRIPTION: -
NO.: 4 DATE: - BY: -
DESCRIPTION: -
NO.: 5 DATE: - BY: -
DESCRIPTION: -
NO.: 6 DATE: - BY: -
DESCRIPTION: -

DATE: 05/12/2022
SCALE:
PROJECT MANAGER:
PROJECT NO.: -
DRAWN BY:
DRAWING FILE: -

PROJECT:

**0 SPACE VILLAGE AVENUE**
**COLORADO SPRINGS, CO**

CLIENT:

COMMERCIAL BUILDING SERVICES
7561 S. GRANT STR., SUITE A-4
LITTLETON, COLORADO 80122

TEL: (303) 730-3001

SHEET TITLE:

SHEET NUMBER:

2 OF 2

no comment

# EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP)
# EL PASO COUNTY APPLICATION AND PERMIT

**EPC Project Number:** MS227 Revised.

***APPLICANT INFORMATION*** ***PERMIT NUMBER***

| **Owner Information** | |
|---|---|
| Property Owner | Hampton Partners |
| Applicant Name (Permit Holder) | Tucker Robinson |
| Company/Agency | Hampton Partners |
| Position of Applicant | Partner |
| Address (physical address, not PO Box) | 201 Fillmore St, Suite 201 |
| City | Denver |
| State | CO |
| Zip Code | 80206 |
| Mailing address, if different from above | |
| Telephone | 303-694-1085 |
| FAX number | NA |
| Email Address | Tucker@hamptonpartners.net |
| Cellular Phone number | |
| **Contractor/Operator Information** | |
| Name (person of responsibility) | TBD |
| Company | TBD |
| Address (physical address, not PO Box) | TBD |
| City | TBD |
| State | |
| Zip Code | |
| Mailing address, if different from above | |
| Telephone | |
| FAX number | |
| Email Address | |
| Cellular Phone number | |
| Erosion Control Supervisor (ECS)* | |
| ECS Phone number* | |
| ECS Cellular Phone number* | |

*Required for all applicants. May be provided at later date pending securing a contract when applicable.

***PROJECT INFORMATION***

| **Project Information** | |
|---|---|
| Project Name | Space Village Filing No. 4 |
| Legal Description | Lots 1 and 2, Block 1, Space Village Filing No. 4 |
| Address (or nearest major cross streets) | Space Village Avenue & Peterson Boulevard |
| Acreage (total and disturbed) | Total: 23.0 acres<br>Disturbed: 23.0 acres<br>Revised. |
| Schedule | Start of Construction:<br>Completion of Construction:<br>Final Stabilization:<br>Provide estimates for these dates (months or seasons acceptable, example: Spring 2023). If truely unknown, ok to leave blank. |
| Project Purpose | Construction of an outdoor storage facility |
| Description of Project | There are no proposed structures. Paving (concrete, asphalt, etc.) for access accounts for 0.1 ac. Paving (gravel, asphalt millings, recycled conc., etc.) accounts for 16.6 ac. The remaining 6.3 ac. includes landscaping. |
| Tax Schedule Number | |

FOR OFFICE USE ONLY

The following signature from the ECM Administrator signifies the approval of this ESQCP. All work shall be performed in accordance with the permit, the El Paso County Engineering Criteria Manual (ECM) Standards, City of Colorado Springs Drainage Criteria Manual, Volume 2 (DCM2) as adopted by El Paso County Addendum, approved plans, and any attached conditions. The approved plans are an enforceable part of the ESQCP. Construction activity, except for the installation of initial construction BMPs, is not permitted until issuance of a Construction Permit and Notice to Proceed.

Signature of ECM Administrator: _____ Date _____

## 1.1 REQUIRED SUBMISSIONS

In addition to this completed and signed application, the following items must be submitted to obtain an ESQCP:

- Permit fees;
- Stormwater Management Plan (SWMP) meeting the requirements of DCM2 and ECM either as part of the plan set or as a separate document;
- Operation and Maintenance Plan for any proposed permanent stormwater control measures; and
- Signed Private Detention Basin/Stormwater Quality Best Management Practice Maintenance Agreement and Easement, if any permanent stormwater control measures are to be constructed.

## 1.2 RESPONSIBILITY FOR DAMAGE

The County and its officers and employees, including but not limited to the ECM Administrator, shall not be answerable or accountable in any manner for damage to property or for injury to or death of any person, including but not limited to a permit holder, persons employed by the permit holder, or persons acting in behalf of the permit holder, from any cause. The permit holder shall be responsible for any liability imposed by law and for damage to property or injuries to or death of any person, including but not limited to the permit holder, persons employed by the permit holder, persons acting in behalf of the permit holder, arising out of work or other activity permitted and done under a permit, or arising out of the failure to perform the obligations under any permit with respect to maintenance or any other obligations, or resulting from defects or obstructions, or from any cause whatsoever during the progress of the work or other activity, or at any subsequent time work or other activity is being performed under the obligations provided by and contemplated by the permit.

The permit holder shall indemnify, save, and hold harmless the County and its officers and employees, including but not limited to the BOCC and ECM Administrator, from all claims, suits or actions of every name, kind and description brought for or on account of damage to property or injuries to or death of any person, including but not limited to the permit holder, persons employed by the permit holder, persons acting in behalf of the permit holder and the public, resulting from the performance of work or other activity under the permit, or arising out of the failure to perform obligations under any permit with respect to maintenance or any other obligations, or resulting from defects or obstructions, or from any cause whatsoever during the progress of the work or other activity, or at any subsequent time work or other activity is being performed under the obligations provided by and contemplated by the permit, except as otherwise provided by state law. The permit holder waives any and all rights to any type of expressed or implied indemnity against the County, its officers or employees. It is the intent of the parties that the permit holder will indemnify, save, and hold harmless the County, its officers and employees from any and all claims, suits or actions as set forth above regardless of the existence or degree of fault of or negligence, whether active or passive, primary or secondary, on the part of the County, the permit holder, persons employed by the permit holder, or persons acting in behalf of the permit holder

## 1.3 APPLICATION CERTIFICATION

We, as the Applicants or the representative of the Applicants, hereby certify that this application is correct and complete as per the requirements presented in this application, the El Paso County Engineering Criteria Manual, and Drainage Criteria Manual, Volume 2 and El Paso County Addendum.

We, as the Applicants or the representatives of the Applicants, have read and will comply with all of the requirements of the specified Stormwater Management Plan and any other documents specifying stormwater best management practices to be used on the site, including permit conditions that may be required by the ECM Administrator. We understand that the stormwater control measures are to be maintained on the site and revised as necessary to protect stormwater quality as the project progresses. We further understand that a Construction Permit must be obtained and all necessary stormwater quality control measures are to be installed in accordance with the SWMP, the El Paso County Engineering Criteria Manual, Drainage Criteria Manual, Volume 2 and El Paso County Addendum before land disturbance begins and that failure to comply will result in a Stop Work Order and may result in other penalties as allowed by law. We further understand and agree to indemnify, save, and hold harmless the County and its officers and employees, including but not limited to the BOCC and ECM Administrator, from all claims, suits or actions of every name, kind and description as outlined in Section 1.2 Responsibility for Damage

_____ Date:_____

Signature of Owner or Representative

_____

Print Name of Owner or Representative

_____ Date:_____

Signature of Operator or Representative

_____

Print Name of Operator or Representative

Permit Fee $_____

Surcharge $_____

Financial Surety $_____ Type of Surety _____

Total $_____

Updated

Please update FAE per comments provided on the GEC/drainage report

Add a Sediment Basin to Section 1 below.

See response to PCD GEC plan with stormwater.

no planning comments

MS227

Revised

# Estimate Form

(With pre-plat construction)

Updated: 11/4/2021

| PROJECT INFORMATION | | |
|---|---|---|
| Space Village Filing No. 4 | August 2022 | |
| **Project Name** | **Date** | **PCD File No.** |

| Description | Quantity | Units | Unit Cost | | Total | (with Pre-Plat Construction) % Complete | Remaining | |
|---|---|---|---|---|---|---|---|---|
| **SECTION 1 - GRADING AND EROSION CONTROL (Construction and Permanent BMPs)** | | | | | | | | |
| * Earthwork | | | | | | | | * |
| less than 1,000; $5,300 min | | CY | $ 8.00 | = | $ - | | $ - | * |
| 1,000-5,000; $8,000 min | | CY | $ 6.00 | = | $ - | | $ - | * |
| 5,001-20,000; $30,000 min | 19,190 | CY | $ 5.00 | = | $ 30,000.00 | 0 | $ 30,000.00 | * |
| 20,001-50,000; $100,000 min | | CY | $ 3.50 | = | $ - | | $ - | * |
| 50,001-200,000; $175,000 min | | CY | $ 2.50 | = | $ - | | $ - | * |
| greater than 200,000; $500,000 min | | CY | $ 2.00 | = | $ - | | $ - | * |
| * Permanent Seeding (inc. noxious weed mgmnt.) | | AC | $ 886.00 | = | $ - | | $ - | * |
| * Mulching | | AC | $ 831.00 | = | $ - | | $ - | * |
| * Permanent Erosion Control Blanket | | SY | $ 7.00 | = | $ - | | $ - | * |
| * Permanent Pond/BMP Construction | | CY | $ 22.00 | = | $ - | | $ - | * |
| * Permanent Pond/BMP (provide engineer's estimate) | 2 | EA | 15,000.00 | = | $ 30,000.00 | 0 | $ 30,000.00 | * |
| | | EA | | = | $ - | | $ - | * |
| Safety Fence | 1,940 | LF | $ 3.00 | = | $ 5,820.00 | 0 | $ 5,820.00 | |
| Temporary Erosion Control Blanket | | SY | $ 3.00 | = | $ - | | $ - | |
| Vehicle Tracking Control | 2 | EA | $ 2,625.00 | = | $ 5,250.00 | 0 | $ 5,250.00 | |
| Silt Fence | | LF | $ 3.00 | = | $ - | | $ - | |
| Temporary Seeding | 22.8 | AC | $ 695.00 | = | $ 15,846.00 | 0 | $ 15,846.00 | |
| Temporary Mulch | 22.8 | AC | $ 831.00 | = | $ 18,947.00 | 0 | $ 18,947.00 | |
| Surface Roughening | 22.8 | AC | $ 600.00 | = | $ 13,680.00 | 0 | $ 13,680.00 | |
| Erosion Logs/Straw Wattles | 2,165 | LF | $ 6.00 | = | $ 12,990.00 | 0 | $ 12,990.00 | |
| Rock Check Dams | 9 | EA | $ 554.00 | = | $ 4,986.00 | 0 | $ 4,986.00 | |
| Culvert Inlet Protection | 1 | EA | $ 1,108.00 | = | $ 1,108.00 | 0 | $ 1,108.00 | |
| Stabilized Staging Area | 4,627 | SY | $ 2.00 | = | $ 9,254.00 | 0 | $ 9,254.00 | |
| Concrete Washout Basin | 1 | EA | $ 997.00 | = | $ 997.00 | 0 | $ 997.00 | |
| | | | | = | $ - | | $ - | |
| *[insert items not listed but part of construction plans]* | | | | = | $ - | | $ - | |
| | | **MAINTENANCE (35% of Construction BMPs)** | | = | $ 52,107.00 | | $ 52,107.00 | |
| * - Subject to defect warranty financial assurance. A minimum of 20% shall be retained until final acceptance (MAXIMUM OF 80% COMPLETE ALLOWED) | | **Section 1 Subtotal** | | = | **$ 200,985.00** | | **$ 200,985.00** | |
| **SECTION 2 - PUBLIC IMPROVEMENTS *** | | | | | | | | |
| **ROADWAY IMPROVEMENTS** | | | | | | | | * |
| Construction Traffic Control | | LS | | = | $ - | | $ - | * |
| Aggregate Base Course (135 lbs/cf) | | Tons | $ 31.00 | = | $ - | | $ - | * |
| Aggregate Base Course (135 lbs/cf) | | CY | $ 56.00 | | $ - | | $ - | * |
| Asphalt Pavement (3" thick) | | SY | $ 16.00 | | $ - | | $ - | * |
| Asphalt Pavement (4" thick) | | SY | $ 21.00 | | $ - | | $ - | * |
| Asphalt Pavement (6" thick) | | SY | $ 32.00 | | $ - | | $ - | * |
| Asphalt Pavement (147 lbs/cf) _" thick | | Tons | $ 97.00 | = | $ - | | $ - | * |
| Raised Median, Paved | | SF | $ 9.00 | = | $ - | | $ - | * |
| Regulatory Sign/Advisory Sign | | EA | $ 333.00 | = | $ - | | $ - | * |
| Guide/Street Name Sign | | EA | | = | $ - | | $ - | * |
| Epoxy Pavement Marking | | SF | $ 15.00 | = | $ - | | $ - | * |
| Thermoplastic Pavement Marking | | SF | $ 26.00 | = | $ - | | $ - | * |
| Barricade - Type 3 | | EA | $ 221.00 | = | $ - | | $ - | * |
| Delineator - Type I | | EA | $ 27.00 | = | $ - | | $ - | * |
| Curb and Gutter, Type A (6" Vertical) | | LF | $ 32.00 | = | $ - | | $ - | * |
| Curb and Gutter, Type B (Median) | | LF | $ 32.00 | = | $ - | | $ - | * |
| Curb and Gutter, Type C (Ramp) | | LF | $ 32.00 | = | $ - | | $ - | * |
| 4" Sidewalk (common areas only) | | SY | $ 53.00 | = | $ - | | $ - | * |
| 5" Sidewalk | | SY | $ 66.00 | = | $ - | | $ - | * |
| 6" Sidewalk | | SY | $ 80.00 | = | $ - | | $ - | * |
| 8" Sidewalk | | SY | $ 106.00 | | $ - | | $ - | * |
| Pedestrian Ramp | | EA | $ 1,273.00 | = | $ - | | $ - | * |
| Cross Pan, local (8" thick, 6' wide to include return) | | LF | $ 67.00 | = | $ - | | $ - | * |
| Cross Pan, collector (9" thick, 8' wide to include return) | | LF | $ 102.00 | | $ - | | $ - | * |
| Curb Chase | | EA | $ 1,639.00 | = | $ - | | $ - | * |
| Guardrail Type 3 (W-Beam) | | LF | $ 55.00 | = | $ - | | $ - | * |
| Guardrail Type 7 (Concrete) | | LF | $ 80.00 | = | $ - | | $ - | * |
| Guardrail End Anchorage | | EA | $ 2,324.00 | = | $ - | | $ - | * |
| Guardrail Impact Attenuator | | EA | $ 4,172.00 | = | $ - | | $ - | * |
| Sound Barrier Fence (CMU block, 6' high) | | LF | $ 87.00 | | $ - | | $ - | * |
| Sound Barrier Fence (panels, 6' high) | | LF | $ 89.00 | = | $ - | | $ - | * |
| Electrical Conduit, Size = | | LF | $ 18.00 | = | $ - | | $ - | * |
| Traffic Signal, complete intersection | | EA | $ 470,666 | = | $ - | | $ - | * |

| PROJECT INFORMATION | | |
|---|---|---|
| Space Village Filing No. 4 | August 2022 | |
| **Project Name** | **Date** | **PCD File No.** |

| Description | Quantity | Units | Unit Cost | | Total | (with Pre-Plat Construction) % Complete | Remaining | |
|---|---|---|---|---|---|---|---|---|
| | | | | = | $ - | | $ - | |
| *[insert items not listed but part of construction plans]* | | | | = | $ - | | $ - | * |
| **STORM DRAIN IMPROVEMENTS** | | | | | | | | * |
| Concrete Box Culvert (M Standard), Size ( W x H ) | | LF | | = | $ - | | $ - | * |
| 18" Reinforced Concrete Pipe | | LF | $ 70.00 | = | $ - | | $ - | * |
| 24" Reinforced Concrete Pipe | | LF | $ 83.00 | = | $ - | | $ - | * |
| 30" Reinforced Concrete Pipe | | LF | $ 104.00 | = | $ - | | $ - | * |
| 36" Reinforced Concrete Pipe | | LF | $ 128.00 | = | $ - | | $ - | * |
| 42" Reinforced Concrete Pipe | | LF | $ 171.00 | = | $ - | | $ - | * |
| 48" Reinforced Concrete Pipe | | LF | $ 209.00 | = | $ - | | $ - | * |
| 54" Reinforced Concrete Pipe | | LF | $ 272.00 | = | $ - | | $ - | * |
| 60" Reinforced Concrete Pipe | | LF | $ 319.00 | = | $ - | | $ - | * |
| 66" Reinforced Concrete Pipe | | LF | $ 368.00 | = | $ - | | $ - | * |
| 72" Reinforced Concrete Pipe | | LF | $ 421.00 | = | $ - | | $ - | * |
| 18" Corrugated Steel Pipe | | LF | $ 90.00 | = | $ - | | $ - | * |
| 24" Corrugated Steel Pipe | | LF | $ 103.00 | = | $ - | | $ - | * |
| 30" Corrugated Steel Pipe | | LF | $ 131.00 | = | $ - | | $ - | * |
| 36" Corrugated Steel Pipe | | LF | $ 157.00 | = | $ - | | $ - | * |
| 42" Corrugated Steel Pipe | | LF | $ 180.00 | = | $ - | | $ - | * |
| 48" Corrugated Steel Pipe | | LF | $ 190.00 | = | $ - | | $ - | * |
| 54" Corrugated Steel Pipe | | LF | $ 278.00 | = | $ - | | $ - | * |
| 60" Corrugated Steel Pipe | | LF | $ 300.00 | = | $ - | | $ - | * |
| 66" Corrugated Steel Pipe | | LF | $ 364.00 | = | $ - | | $ - | * |
| 72" Corrugated Steel Pipe | | LF | $ 428.00 | = | $ - | | $ - | * |
| 78" Corrugated Steel Pipe | | LF | $ 492.00 | = | $ - | | $ - | * |
| 84" Corrugated Steel Pipe | | LF | $ 588.00 | = | $ - | | $ - | * |
| Flared End Section (FES) RCP Size = (unit cost = 6x pipe unit cost) | | EA | | = | $ - | | $ - | * |
| Flared End Section (FES) CSP Size = (unit cost = 6x pipe unit cost) | | EA | | = | $ - | | $ - | * |
| End Treatment- Headwall | | EA | | = | $ - | | $ - | * |
| End Treatment- Wingwall | | EA | | = | $ - | | $ - | * |
| End Treatment - Cutoff Wall | | EA | | = | $ - | | $ - | * |
| Curb Inlet (Type R) L=5', Depth < 5' | | EA | $ 6,138.00 | = | $ - | | $ - | * |
| Curb Inlet (Type R) L=5', 5' ≤ Depth < 10' | | EA | $ 7,981.00 | = | $ - | | $ - | * |
| Curb Inlet (Type R) L =5', 10' ≤ Depth < 15' | | EA | $ 9,242.00 | = | $ - | | $ - | * |
| Curb Inlet (Type R) L =10', Depth < 5' | | EA | $ 8,447.00 | = | $ - | | $ - | * |
| Curb Inlet (Type R) L =10', 5' ≤ Depth < 10' | | EA | $ 8,706.00 | = | $ - | | $ - | * |
| Curb Inlet (Type R) L =10', 10' ≤ Depth < 15' | | EA | $ 10,898.00 | = | $ - | | $ - | * |
| Curb Inlet (Type R) L =15', Depth < 5' | | EA | $ 10,984.00 | = | $ - | | $ - | * |
| Curb Inlet (Type R) L =15', 5' ≤ Depth < 10' | | EA | $ 11,775.00 | = | $ - | | $ - | * |
| Curb Inlet (Type R) L =15', 10' ≤ Depth < 15' | | EA | $ 12,876.00 | = | $ - | | $ - | * |
| Curb Inlet (Type R) L =20', Depth < 5' | | EA | $ 11,706.00 | = | $ - | | $ - | * |
| Curb Inlet (Type R) L =20', 5' ≤ Depth < 10' | | EA | $ 12,920.00 | = | $ - | | $ - | * |
| Grated Inlet (Type C), Depth < 5' | | EA | $ 5,138.00 | = | $ - | | $ - | * |
| Grated Inlet (Type D), Depth < 5' | | EA | $ 6,347.00 | = | $ - | | $ - | * |
| Storm Sewer Manhole, Box Base | | EA | $ 12,876.00 | = | $ - | | $ - | * |
| Storm Sewer Manhole, Slab Base | | EA | $ 7,082.00 | = | $ - | | $ - | * |
| Geotextile (Erosion Control) | | SY | $ 7.00 | = | $ - | | $ - | * |
| Rip Rap, d50 size from 6" to 24" | | Tons | $ 89.00 | = | $ - | | $ - | * |
| Rip Rap, Grouted | | Tons | $ 105.00 | = | $ - | | $ - | * |
| Drainage Channel Construction, Size ( W x H ) | | LF | $ - | = | $ - | | $ - | * |
| Drainage Channel Lining, Concrete | | CY | $ 631.00 | = | $ - | | $ - | * |
| Drainage Channel Lining, Rip Rap | | CY | $ 124.00 | = | $ - | | $ - | * |
| Drainage Channel Lining, Grass | | AC | $ 1,626.00 | = | $ - | | $ - | |
| Drainage Channel Lining, Other Stabilization | | | | = | $ - | | $ - | * |
| | | | | = | $ - | | $ - | |
| *[insert items not listed but part of construction plans]* | | | | = | $ - | | $ - | |
| * - Subject to defect warranty financial assurance. A minimum of 20% shall be retained until final acceptance (MAXIMUM OF 80% COMPLETE ALLOWED) | | **Section 2 Subtotal** | | **=** | **$ -** | | **$ -** | |

| PROJECT INFORMATION | | |
|---|---|---|
| Space Village Filing No. 4 | August 2022 | |
| **Project Name** | **Date** | **PCD File No.** |

| Description | Quantity | Units | Unit Cost | | Total | (with Pre-Plat Construction) % Complete | (with Pre-Plat Construction) Remaining |
|---|---|---|---|---|---|---|---|
| **SECTION 3 - COMMON DEVELOPMENT IMPROVEMENTS (Private or District and NOT Maintained by EPC)**** | | | | | | | |
| **ROADWAY IMPROVEMENTS** | | | | | | | |
| | | | | = | $ - | | $ - |
| | | | | = | $ - | | $ - |
| | | | | = | $ - | | $ - |
| | | | | = | $ - | | $ - |
| | | | | = | $ - | | $ - |
| | | | | = | $ - | | $ - |
| **STORM DRAIN IMPROVEMENTS** | (Exception: Permanent Pond/BMP shall be itemized under Section 1) | | | | | | |
| | | | | = | $ - | | $ - |
| | | | | = | $ - | | $ - |
| | | | | = | $ - | | $ - |
| | | | | = | $ - | | $ - |
| | | | | = | $ - | | $ - |
| | | | | = | $ - | | $ - |
| **WATER SYSTEM IMPROVEMENTS** | | | | | | | |
| Water Main Pipe (PVC), Size 8" | | LF | $ 71.00 | = | $ - | | $ - |
| Water Main Pipe (Ductile Iron), Size 8" | | LF | $ 83.00 | = | $ - | | $ - |
| Gate Valves, 8" | | EA | $ 2,058.00 | = | $ - | | $ - |
| Fire Hydrant Assembly, w/ all valves | | EA | $ 7,306.00 | = | $ - | | $ - |
| Water Service Line Installation, inc. tap and valves | | EA | $ 1,466.00 | = | $ - | | $ - |
| Fire Cistern Installation, complete | | EA | | = | $ - | | $ - |
| | | | | = | $ - | | $ - |
| *[insert items not listed but part of construction plans]* | | | | = | $ - | | $ - |
| **SANITARY SEWER IMPROVEMENTS** | | | | | | | |
| Sewer Main Pipe (PVC), Size 8" | | LF | $ 71.00 | = | $ - | | $ - |
| Sanitary Sewer Manhole, Depth < 15 feet | | EA | $ 4,858.00 | = | $ - | | $ - |
| Sanitary Service Line Installation, complete | | EA | $ 1,553.00 | = | $ - | | $ - |
| Sanitary Sewer Lift Station, complete | | EA | | = | $ - | | $ - |
| | | | | = | $ - | | $ - |
| *[insert items not listed but part of construction plans]* | | | | = | $ - | | $ - |
| **LANDSCAPING IMPROVEMENTS** | (For subdivision specific condition of approval, or PUD) | | | | | | |
| | | EA | | = | $ - | | $ - |
| | | EA | | = | $ - | | $ - |
| | | EA | | = | $ - | | $ - |
| | | EA | | = | $ - | | $ - |
| | | EA | | = | $ - | | $ - |
| ** - Section 3 is not subject to defect warranty requirements | | | **Section 3 Subtotal** | **=** | **$ -** | | **$ -** |

| PROJECT INFORMATION | | |
|---|---|---|
| Space Village Filing No. 4 | August 2022 | |
| **Project Name** | **Date** | **PCD File No.** |

| Description | Quantity | Units | Unit Cost | | Total | (with Pre-Plat Construction) % Complete | Remaining |
|---|---|---|---|---|---|---|---|
| **AS-BUILT PLANS (Public Improvements inc. Permanent WQCV BMPs)** | | LS | $ 5,000.00 | = | $ $ 5,000.00 | 0 | $ $ 5,000.00 |
| **POND/BMP CERTIFICATION (inc. elevations and volume calculations)** | | LS | $ 5,000.00 | = | $ $ 5,000.00 | 0 | $ $ 5,000.00 |

**Total Construction Financial Assurance** **$ 210,985.00**
(Sum of all section subtotals plus as-builts and pond/BMP certification)

**Total Remaining Construction Financial Assurance (with Pre-Plat Construction)** **$ 210,985.00**
(Sum of all section totals less credit for items complete plus as-builts and pond/BMP certification)

**Total Defect Warranty Financial Assurance** **$ 12,000.00**
(20% of all items identified as (*). To be collateralized at time of preliminary acceptance)

## Approvals

I hereby certify that this is an accurate and complete estimate of costs for the work as shown on the Grading and Erosion Control Plan and Construction Drawings associated with the Project.

Engineer (P.E. Seal Required)

Approved by Owner / Applicant — Date

Approved by El Paso County Engineer / ECM Administrator — Date

8 / 10 / 22

3275 Akers Drive
Colorado Springs, CO 80922
Phone 719-520-6460
Fax 719-520-6879
www.elpasoco.com

Please remove GEC Plan Checklist from the Grading and Erosion Control Plan.

Removed.

no comments from planning.

see engineering comments in the report

Noted.

# GRADING AND EROSION CONTROL PLAN CHECKLIST

EPC Project Number:

Revised: October 2021

| | | Applicant | EPC |
|---|---|---|---|
| **1. GRADING AND EROSION CONTROL PLAN** (complete form using Y, N, N/A in the "Applicant" column) | | | |
| a | Vicinity map | Y | |
| b | Adjacent city/town/jurisdictional boundaries, subdivision names, and property parcel numbers labeled | Y | |
| c | North arrow and acceptable scale (1"=20' to 1"=100') | Y | |
| d | Legend for all symbols used in the plan | Y | |
| e | Existing and proposed property lines. Proposed subdivision boundary for subdivision projects | Y | |
| f | All existing structures | Y | |
| g | All existing utilities | Y | |
| h | Construction site boundaries | Y | |
| i | Existing vegetation (notes are acceptable in cases where there is no notable vegetation, only grasses/weeds, or site has already been stripped) | Y | |
| j | FEMA 100-yr floodplain | Y | |
| k | Existing and proposed water courses including springs, streams, wetlands, detention ponds, stormwater quality structures, roadside ditches, irrigation ditches and other water surfaces. Show maintenance of pre-existing vegetation within 50 feet of a receiving water | Y | |
| l | Existing and proposed contours 2 feet or less (except for hillside) | Y | |
| m | Limits of disturbance delineating all anticipated areas of soil disturbance | Y | |
| n | Identify and protect areas outside of the construction site boundary with existing fencing, construction fencing or other methods as appropriate | Y | |
| o | Off-site grading clearly shown and called out | N/A | |
| p | Areas of cut and fill identified | Y | |
| q | Conclusions from soils/geotechnical report and geologic hazards report incorporated in grading design (slopes, embankments, materials, mitigation, etc.) | N/A | |
| r | Proposed slopes steeper than 3:1 with top and toe of slope delineated. Erosion control blanketing or other protective covering required | N/A | |
| s | Stormwater flow direction arrows | Y | |
| t | Location of any dedicated asphalt / concrete batch plants | N/A | |
| u | Areas used for staging, storage of building materials, soils (stockpiles) or wastes. The use of construction office trailers requires PCD permitting | Y | |
| v | All proposed temporary construction control measures, structural and non-structural. Temporary construction control measures shall be identified by phase of implementation to include" "initial," "interim," and "final" or shown on separate phased maps identifying each phase | Y | |
| w | Vehicle tracking provided at all construction entrances/exits. Construction fencing, barricades, and/or signage provided at access points not to be used for construction | Y | |
| x | Temporary sediment ponds provided for disturbed drainage areas greater than 1 acre | Y | |

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# EL PASO COUNTY
# GRADING AND EROSION CONTROL PLAN CHECKLIST

EPC Project Number:

Revised: October 2021

| | | Applicant | EPC |
|---|---|---|---|
| y | Dewatering operations to include locations of diversion, pump and discharge(s) as anticipated at time of design | N/A | |
| z | All proposed temporary construction control measure details. Custom or other jurisdiction's details used must meet or exceed EPC standards | Y | |
| aa | Any off-site stormwater control measure proposed for use by the project and not under the direct control or ownership of the Owner or Operator | N/A | |
| bb | Existing and proposed permanent storm water management facilities, including areas proposed for stormwater infiltration or subsurface detention | Y | |
| cc | Existing and proposed easements (permanent and construction) including required off-site easements | Y | |
| dd | Retaining walls shall not to be located in County ROW unless approved via license agreement. A building permit from Regional Building Department is required for walls greater than or equal to 4 feet in height, series of walls, or walls supporting a surcharge and must be design by P.E. | N/A | |
| ee | Plan certified by a Colorado Registered P.E., with EPC standard signature blocks for Engineer, Owner and EPC | Y | |
| ff | Engineer's Statement (for standalone GEC Plan):<br>This Grading and Erosion Control Plan was prepared under my direction and supervision and is correct to the best of my knowledge and belief. Said Plan has been prepared according to the criteria established by the County for Grading and Erosion Control Plans. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparing this plan.<br>_____ _____<br>Engineer of Record Signature Date | Y | |
| gg | Engineer's Statement (for GEC Plan within Construction Drawing set):<br>These detailed plans and specifications were prepared under my direction and supervision. Said plans and specifications have been prepared according to the criteria established by the County for detailed roadway, drainage, grading and erosion control plans and specifications, and said plans and specifications are in conformity with applicable master drainage plans and master transportation plans. Said plans and specifications meet the purposes for which the particular roadway and drainage facilities are designed and are correct to the best of my knowledge and belief. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparation of these detailed plans and specifications.<br>_____ _____<br>Engineer of Record Signature Date | N/A | |
| hh | Owner's Statement (for standalone GEC Plan):<br>I, the owner/developer have read and will comply with the requirements of the Grading and Erosion Control Plan.<br>_____ _____<br>Owner Signature Date | Y | |
| ii | Owner's Statement (for GEC Plan within Construction Drawing set):<br>I, the owner/developer have read and will comply with the requirements of the grading and erosion control plan and all of the requirements specified in these detailed plans and specifications.<br>_____ _____<br>Owner Signature Date | N/A | |

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# EL PASO COUNTY
# GRADING AND EROSION CONTROL PLAN CHECKLIST

EPC Project Number:

Revised: October 2021

| | | Applicant | EPC |
|---|---|---|---|
| jj | El Paso County:<br>County plan review is provided only for general conformance with County Design Criteria. The County is not responsible for the accuracy and adequacy of the design, dimensions, and/ or elevations which shall be confirmed at the job site. The County through the approval of this document assumes no responsibility for completeness and/ or accuracy of this document.<br><br>Filed in accordance with the requirements of the El Paso County Land Development Code, Drainage Criteria Manual Volumes 1 and 2, and Engineering Criteria Manual, as amended.<br><br>In accordance with ECM Section 1.12, these construction documents will be valid for construction for a period of 2 years from the date signed by the El Paso County Engineer. If construction has not started within those 2 years, the plans will need to be resubmitted for approval, including payment of review fees at the Planning and Community Development Director's discretion.<br><br>_____ _____<br>Jennifer Irvine, P.E. Date<br>County Engineer/ECM Administrator | Y | |
| **2. ADDITIONAL REPORTS/PERMITS/DOCUMENTS** | | | |
| a | Soils report / geotechnical investigation as appropriate for grading/utilities/drainage/road construction. | | |
| b | Use Agreement/easement between the Owner or Operator and other third party for use of all off-site grading or stormwater control measures, used by the owner or operator but not under their direct control or ownership. | | |
| c | Floodplain Development Permit | N/A | |
| d | USACE 404/wetlands permit/mitigation plan | N/A | |
| e | FEMA CLOMR | N/A | |
| f | State Engineer's permit/Notice Of Intent to Construct | N/A | |
| g | Stormwater Management Plan (SWMP) | Y | |
| h | Financial Assurance Estimate (FAE) (signed) | | |
| i | Erosion and Stormwater Quality Control Permit (ESQCP) (signed) | | |
| j | Pre-Development Site Grading Acknowledgement & Right of Access Form (signed) | | |
| k | Conditions of Approval met? | N/A | |

3275 Akers Drive
Colorado Springs, CO 80922
Phone 719-520-6460
Fax 719-520-6879
www.elpasoco.com

# EL PASO COUNTY
# GRADING AND EROSION CONTROL PLAN CHECKLIST

EPC Project Number:

Revised: October 2021

| | | Applicant | EPC |
|---|---|---|---|
| **3. STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS** | | | |
| 1 | Stormwater discharges from construction sites shall not cause or threaten to cause pollution, contamination, or degradation of State Waters. All work and earth disturbance shall be done in a manner that minimizes pollution of any on-site or off-site waters, including wetlands. | Y | |
| 2 | Notwithstanding anything depicted in these plans in words or graphic representation, all design and construction related to roads, storm drainage and erosion control shall conform to the standards and requirements of the most recent version of the relevant adopted El Paso County standards, including the Land Development Code, the Engineering Criteria Manual, the Drainage Criteria Manual, and the Drainage Criteria Manual Volume 2. Any deviations from regulations and standards must be requested, and approved, in writing. | Y | |
| 3 | A separate Stormwater Management Plan (SMWP) for this project shall be completed and an Erosion and Stormwater Quality Control Permit (ESQCP) issued prior to commencing construction. Management of the SWMP during construction is the responsibility of the designated Qualified Stormwater Manager or Certified Erosion Control Inspector. The SWMP shall be located on-site at all times during construction and shall be kept up to date with work progress and changes in the field. | Y | |
| 4 | Once the ESQCP is approved and a “Notice to Proceed” has been issued, the contractor may install the initial stage erosion and sediment control measures as indicated on the approved GEC. A Preconstruction Meeting between the contractor, engineer, and El Paso County will be held prior to any construction. It is the responsibility of the applicant to coordinate the meeting time and place with County staff. | Y | |
| 5 | Control measures must be installed prior to commencement of activities that could contribute pollutants to stormwater. Control measures for all slopes, channels, ditches, and disturbed land areas shall be installed immediately upon completion of the disturbance. | Y | |
| 6 | All temporary sediment and erosion control measures shall be maintained and remain in effective operating condition until permanent soil erosion control measures are implemented and final stabilization is established. All persons engaged in land disturbance activities shall assess the adequacy of control measures at the site and identify if changes to those control measures are needed to ensure the continued effective performance of the control measures. All changes to temporary sediment and erosion control measures must be incorporated into the Stormwater Management Plan. | Y | |
| 7 | Temporary stabilization shall be implemented on disturbed areas and stockpiles where ground disturbing construction activity has permanently ceased or temporarily ceased for longer than 14 days. | Y | |
| 8 | Final stabilization must be implemented at all applicable construction sites. Final stabilization is achieved when all ground disturbing activities are complete and all disturbed areas either have a uniform vegetative cover with individual plant density of 70 percent of pre-disturbance levels established or equivalent permanent alternative stabilization method is implemented. All temporary sediment and erosion control measures shall be removed upon final stabilization and before permit closure. | Y | |
| 9 | All permanent stormwater management facilities shall be installed as designed in the approved plans. Any proposed changes that effect the design or function of permanent stormwater management structures must be approved by the ECM Administrator prior to implementation. | Y | |

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# EL PASO COUNTY
# GRADING AND EROSION CONTROL PLAN CHECKLIST

EPC Project Number:

| | Revised: October 2021 | Applicant | EPC |
|---|---|---|---|
| 10 | Earth disturbances shall be conducted in such a manner so as to effectively minimize accelerated soil erosion and resulting sedimentation. All disturbances shall be designed, constructed, and completed so that the exposed area of any disturbed land shall be limited to the shortest practical period of time. Pre-existing vegetation shall be protected and maintained within 50 horizontal feet of a waters of the state unless shown to be infeasible and specifically requested and approved. | Y | |
| 11 | Compaction of soil must be prevented in areas designated for infiltration control measures or where final stabilization will be achieved by vegetative cover. Areas designated for infiltration control measures shall also be protected from sedimentation during construction until final stabilization is achieved. If compaction prevention is not feasible due to site constraints, all areas designated for infiltration and vegetation control measures must be loosened prior to installation of the control measure(s). | Y | |
| 12 | Any temporary or permanent facility designed and constructed for the conveyance of stormwater around, through, or from the earth disturbance area shall be a stabilized conveyance designed to minimize erosion and the discharge of sediment off-site. | Y | |
| 13 | Concrete wash water shall be contained and disposed of in accordance with the SWMP. No wash water shall be discharged to or allowed to enter State Waters, including any surface or subsurface storm drainage system or facilities. Concrete washouts shall not be located in an area where shallow groundwater may be present, or within 50 feet of a surface water body, creek or stream. | Y | |
| 14 | During dewatering operations, uncontaminated groundwater may be discharged on-site, but shall not leave the site in the form of surface runoff unless an approved State dewatering permit is in place. | Y | |
| 15 | Erosion control blanketing or other protective covering shall be used on slopes steeper than 3:1. | Y | |
| 16 | Contractor shall be responsible for the removal of all wastes from the construction site for disposal in accordance with local and State regulatory requirements. No construction debris, tree slash, building material wastes or unused building materials shall be buried, dumped, or discharged at the site. | Y | |
| 17 | Waste materials shall not be temporarily placed or stored in the street, alley, or other public way, unless in accordance with an approved Traffic Control Plan. Control measures may be required by El Paso County Engineering if deemed necessary, based on specific conditions and circumstances. | Y | |
| 18 | Tracking of soils and construction debris off-site shall be minimized. Materials tracked off-site shall be cleaned up and properly disposed of immediately. | Y | |
| 19 | The owner/developer shall be responsible for the removal of all construction debris, dirt, trash, rock, sediment, soil, and sand that may accumulate in roads, storm drains and other drainage conveyance systems and stormwater appurtenances as a result of site development. | Y | |
| 20 | The quantity of materials stored on the project site shall be limited, as much as practical, to that quantity required to perform the work in an orderly sequence. All materials stored on-site shall be stored in a neat, orderly manner, in their original containers, with original manufacturer's labels. | Y | |
| 21 | No chemical(s) having the potential to be released in stormwater are to be stored or used on-site unless permission for the use of such chemical(s) is granted in writing by the ECM Administrator. In granting approval for the use of such chemical(s), special conditions and monitoring may be required. | Y | |
| 22 | Bulk storage of allowed petroleum products or other allowed liquid chemicals in excess of 55 gallons shall require adequate secondary containment protection to contain all spills on-site and to prevent any spilled materials from entering State Waters, any surface or subsurface storm drainage system or other facilities. | Y | |

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# EL PASO COUNTY
# GRADING AND EROSION CONTROL PLAN CHECKLIST

EPC Project Number:

Revised: October 2021

| | | Applicant | EPC |
|---|---|---|---|
| 23 | No person shall cause the impediment of stormwater flow in the curb and gutter or ditch except with approved sediment control measures. | Y | |
| 24 | Owner/developer and their agents shall comply with the "Colorado Water Quality Control Act" (Title 25, Article 8, CRS), and the "Clean Water Act" (33 USC 1344), in addition to the requirements of the Land Development Code, DCM Volume II and the ECM Appendix I. All appropriate permits must be obtained by the contractor prior to construction (1041, NPDES, Floodplain, 404, fugitive dust, etc.). In the event of conflicts between these requirements and other laws, rules, or regulations of other Federal, State, local, or County agencies, the most restrictive laws, rules, or regulations shall apply. | Y | |
| 25 | All construction traffic must enter/exit the site only at approved construction access points. | Y | |
| 26 | Prior to construction the permittee shall verify the location of existing utilities. | Y | |
| 27 | A water source shall be available on-site during earthwork operations and shall be utilized as required to minimize dust from earthwork equipment and wind. | Y | |
| 28 | The soils report for this site has been prepared by **[Company Name, Date of Report]** and shall be considered a part of these plans. | Y | |
| 29 | At least ten (10) days prior to the anticipated start of construction, for projects that will disturb one (1) acre or more, the owner or operator of construction activity shall submit a permit application for stormwater discharge to the Colorado Department of Public Health and Environment, Water Quality Division. The application contains certification of completion of a stormwater management plan (SWMP), of which this Grading and Erosion Control Plan may be a part. For information or application materials contact:<br><br>Colorado Department of Public Health and Environment<br>Water Quality Control Division<br>WQCD – Permits<br>4300 Cherry Creek Drive South<br>Denver, CO 80246-1530<br>Attn: Permits Unit | Y | |
| **4. APPLICANT COMMENTS** | | | |
| a | | | |
| b | | | |
| c | | | |

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# EL PASO COUNTY
# GRADING AND EROSION CONTROL PLAN CHECKLIST

EPC Project Number:

Revised: October 2021

| | | Applicant | EPC |
|---|---|---|---|
| **5. CHECKLIST REVIEW CERTIFICATIONS** | | | |
| a | Engineer of Record:<br>The Grading and Erosion Control Plan was prepared under my direction and supervision and is complete and correct to the best of my knowledge and belief. Said Plan has been prepared according to the criteria established by the County for Grading and Erosion Control Plans.<br>Digitally signed by Jay M. Newell<br>SN: C=US CN=Jay M. Newell O="Sterling Design Associates, llc" E=jay@sterlingdesignassociates.com<br>Date: 2022.07.25 09:42:20 -06'00'<br>Engineer of Record Signature August 2022 Date | | |
| b | Review Engineer:<br>The Grading and Erosion Control Plan was reviewed and found to meet the checklist requirements except where otherwise noted or allowed by an approved deviation request.<br>Review Engineer Date | | |

# SPACE VILLAGE FILING NO. 4

## A PORTION OF THE NW 1/4 OF SEC. 17, T14S, R65W, OF THE 6th P.M., EL PASO COUNTY, COLORADO

## GRADING & EROSION CONTROL PLAN

## EL PASO COUNTY STANDARD NOTES

1. STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS. ALL WORK AND EARTH DISTURBANCE SHALL BE DONE IN A MANNER THAT MINIMIZES POLLUTION OF ANY ON-SITE OR OFF-SITE WATERS, INCLUDING WETLANDS.

2. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.

3. A SEPARATE STORMWATER MANAGEMENT PLAN (SWMP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. MANAGEMENT OF THE SWMP DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE DESIGNATED QUALIFIED STORMWATER MANAGER OR CERTIFIED EROSION CONTROL INSPECTOR. THE SWMP SHALL BE LOCATED ON-SITE AT ALL TIMES DURING AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.

4. ONCE THE ESQCP IS APPROVED AND A "NOTICE TO PROCEED" HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL MEASURES AS INDICATED ON THE APPROVED GEC. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE APPLICANT TO COORDINATE THE MEETING TIME AND PLACE WITH COUNTY STAFF.

5. CONTROL MEASURES MUST BE INSTALLED PRIOR TO COMMENCEMENT OF ACTIVITIES THAT COULD CONTRIBUTE POLLUTANTS TO STORMWATER. CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, AND DISTURBED LAND AREAS SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF THE DISTURBANCE.

6. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE MAINTAINED AND REMAIN IN EFFECTIVE OPERATING CONDITION UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND FINAL STABILIZATION IS ESTABLISHED. ALL PERSONS ENGAGED IN LAND DISTURBANCE ACTIVITIES SHALL ASSESS THE ADEQUACY OF CONTROL MEASURES AT THE SITE AND IDENTIFY IF CHANGES TO THOSE CONTROL MEASURES ARE NEEDED TO ENSURE THE CONTINUED EFFECTIVE PERFORMANCE OF THE CONTROL MEASURES. ALL CHANGES TO TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES MUST BE INCORPORATED INTO THE STORMWATER MANAGEMENT PLAN.

7. TEMPORARY STABILIZATION SHALL BE IMPLEMENTED ON DISTURBED AREAS AND STOCKPILES WHERE GROUND DISTURBING CONSTRUCTION ACTIVITY HAS PERMANENTLY CEASED OR TEMPORARILY CEASED FOR LONGER THAN 14 DAYS.

8. FINAL STABILIZATION MUST BE IMPLEMENTED AT ALL APPLICABLE CONSTRUCTION SITES. FINAL STABILIZATION IS ACHIEVED WHEN ALL GROUND DISTURBING ACTIVITIES ARE COMPLETE AND ALL DISTURBED AREAS EITHER HAVE A UNIFORM VEGETATIVE COVER WITH INDIVIDUAL PLANT DENSITY OF 70 PERCENT OF PRE-DISTURBANCE LEVELS ESTABLISHED OR EQUIVALENT PERMANENT ALTERNATIVE STABILIZATION METHOD IS IMPLEMENTED. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED UPON FINAL STABILIZATION AND BEFORE PERMIT CLOSURE.

9. ALL PERMANENT STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AS DESIGNED IN THE APPROVED PLANS. ANY PROPOSED CHANGES THAT EFFECT THE DESIGN OR FUNCTION OF PERMANENT STORMWATER MANAGEMENT STRUCTURES MUST BE APPROVED BY THE ECM ADMINISTRATOR PRIOR TO IMPLEMENTATION.

10. EARTH DISTURBANCES SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY MINIMIZE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION. ALL DISTURBANCES SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHORTEST PRACTICAL PERIOD OF TIME. PRE-EXISTING VEGETATION SHALL BE PROTECTED AND MAINTAINED WITHIN 50 HORIZONTAL FEET OF WATERS OF THE STATE UNLESS SHOWN TO BE INFEASIBLE AND SPECIFICALLY REQUESTED AND APPROVED.

11. COMPACTION OF SOIL MUST BE PREVENTED IN AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES OR WHERE FINAL STABILIZATION WILL BE ACHIEVED BY VEGETATIVE COVER. AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES SHALL ALSO BE PROTECTED FROM SEDIMENTATION DURING CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED. IF COMPACTION PREVENTION IS NOT FEASIBLE DUE TO SITE CONSTRAINTS, ALL AREAS DESIGNATED FOR INFILTRATION AND VEGETATIVE CONTROL MEASURES MUST BE LOOSENED PRIOR TO INSTALLATION OF THE CONTROL MEASURE(S).

12. ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE A STABILIZED CONVEYANCE DESIGNED TO MINIMIZE EROSION AND THE DISCHARGE OF SEDIMENT OFF-SITE.

13. CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO ENTER STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES. CONCRETE WASHOUTS SHALL NOT BE LOCATED IN AN AREA WHERE SHALLOW GROUNDWATER MAY BE PRESENT, OR WITHIN 50 FEET OF A SURFACE WATER BODY, CREEK, OR STREAM.

14. DURING DEWATERING OPERATIONS, UNCONTAMINATED GROUNDWATER MAY BE DISCHARGED ON-SITE, BUT SHALL NOT LEAVE THE SITE IN THE FORM OF SURFACE RUNOFF UNLESS AN APPROVED STATE DEWATERING PERMIT IS IN PLACE.

15. EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING SHALL BE USED ON SLOPES STEEPER THAN 3:1.

16. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL WASTES FROM THE CONSTRUCTION SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REGULATORY REQUIREMENTS. NO CONSTRUCTION DEBRIS, TREE SLASH, BUILDING MATERIAL WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.

17. WASTE MATERIALS SHALL NOT BE TEMPORARILY PLACED OR STORED IN THE STREET, ALLEY, OR OTHER PUBLIC WAY, UNLESS IN ACCORDANCE WITH AN APPROVED TRAFFIC CONTROL PLAN. CONTROL MEASURES MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.

18. TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.

19. THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, SOIL AND SAND THAT MAY ACCUMULATE IN ROADS, STORM DRAINS AND OTHER DRAINAGE CONVEYANCE SYSTEMS AND STORMWATER APPURTENANCES AS A RESULT OF SITE DEVELOPMENT.

20. THE QUANTITY OF MATERIALS STORED ON THE PROJECT SITE SHALL BE LIMITED, AS MUCH AS PRACTICAL, TO THAT QUANTITY REQUIRED TO PERFORM THE WORK IN AN ORDERLY SEQUENCE. ALL MATERIALS STORED ON-SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER, IN THEIR ORIGINAL CONTAINERS, WITH ORIGINAL MANUFACTURER'S LABELS.

21. NO CHEMICAL(S) HAVING THE POTENTIAL TO BE RELEASED IN STORMWATER ARE TO BE STORED OR USED ON-SITE UNLESS PERMISSION FOR THE USE OF SUCH CHEMICALS IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING APPROVAL FOR THE USE OF SUCH CHEMICAL(S), SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.

Know what's **below.**
**Call** before you dig.

## CAUTION - NOTICE TO CONTRACTOR

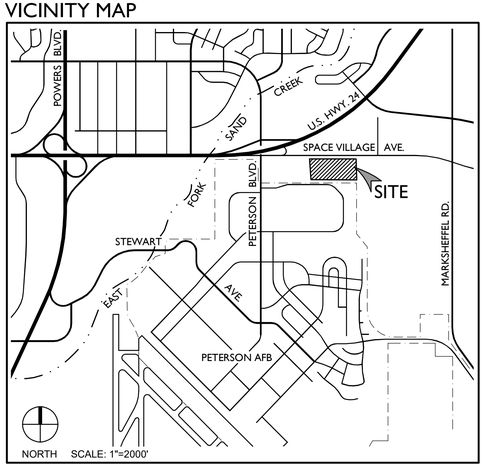
THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING IMPROVEMENTS AND UTILITIES AND SHALL REPAIR ANY DAMAGE AT HIS EXPENSE.

Please add a note stating "Batch Plants are not allowed".

Revised.

## VICINITY MAP




## SHEET INDEX


| | | |
|---|---|---|
| 1 | C900 | GRADING & EROSION CONTROL COVER SHEET (SWMP - SITE MAP) |
| 2 | C901 | GRADING & EROSION CONTROL NOTES (SWMP SITE MAP) |
| 3 | C905 | GRADING & EROSION CONTROL PLAN (SWMP - SITE MAP) |
| 4 | C910 | GRADING & EROSION CONTROL DETAILS (SWMP - SITE MAP) |
| 5 | C911 | GRADING & EROSION CONTROL DETAILS (SWMP - SITE MAP) |
| 6 | C912 | GRADING & EROSION CONTROL DETAILS (SWMP - SITE MAP) |
| 7 | C913 | GRADING & EROSION CONTROL DETAILS (SWMP - SITE MAP) |


## FLOODPLAIN

ZONE X, "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN." AS SHOWN ON FEMA FIRM MAP NO. 08041C0754G, EFFECTIVE DATE, DECEMBER 7, 2018.

## EL PASO COUNTY STANDARD NOTES (CONTINUED)

22. BULK STORAGE OF ALLOWED PETROLEUM PRODUCTS OR OTHER ALLOWED LIQUID CHEMICALS IN EXCESS OF 55 GALLONS SHALL REQUIRE ADEQUATE SECONDARY CONTAINMENT PROTECTION TO CONTAIN ALL SPILLS ON-SITE AND TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR OTHER FACILITIES.

23. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLWO IN THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.

24. OWNER/DEVELOPER AND THEIR AGENTS SHALL COMPLY WITH THE "COLORADO WATER QUALITY CONTROL ACT" (TITLE 25, ARTICLE 8, CRS), AND THE "CLEAN WATER ACT" (33 USC 1344), IN ADDITION TO THE REQUIREMENTS OF THE LAND DEVELOPMENT CODE, DCM VOLUME II AND THE ECM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (1041, NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND OTHER LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, LOCAL, OR COUNTY AGENCIES, THE MOST RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.

25. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT APPROVED CONSTRUCTION ACCESS POINTS.

26. PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.

27. A WATER SOURCE SHALL BE AVAILABLE ON-SITE DURING EARTHWORK OPERATIONS AND SHALL BE UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.

28. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY XXXXX XXXXX XXXXX, DATE XXX; AND SHALL BE CONSIDERED A PART OF THESE PLANS.

29. AT LEAST TEN (10) DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB ONE (1) ACRE OR MORE, THE OWNER OR OPERATOR OF CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLID HEALTH AND ENVIRONMENT, WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THE GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS CONTACT:

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
WATER QUALITY CONTROL DIVISION
WQCD - PERMITS
4300 CHERRY CREEK DRIVE SOUTH
DENVER, CO 80246-15330
ATTN: PERMITS UNIT

Revised.

Fill in the blanks.

## ENGINEER'S STATEMENT

THIS GRADING AND EROSION CONTROL PLAN WAS PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. SAID PLAN HAS BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR GRADING AND EROSION CONTROL PLANS AS APPLICABLE. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS, OR OMISSIONS ON MY PART IN PREPARING THIS PLAN FOR AND ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC.

JAY M. NEWELL, PE
CO PE #35219
FOR AND ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC

## OWNER'S STATEMENT

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

OWNER/DEVELOPER SIGNATURE — DATE

## EL PASO COUNTY

COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY, THROUGH THE APPROVAL OF THIS DOCUMENT, ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL VOLUMES 1 AND 2, AND ENGINEERING CRITERIA MANUAL, AS AMENDED.

IN ACCORDANCE WITH ECM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTOR'S DISCRETION.

JENNIFER IRVINE, PE — DATE
COUNTY ENGINEER / ECM ADMINISTRATOR

Revised.

Please remove "Jennifer Irvine, PE". FYI: For all future submittals "County Engineer/ ECM Administrator" will suffice.


STERLING DESIGN ASSOCIATES
Civil Engineers | Landscape Architects
2009 W. Littleton Blvd. #300 Littleton, CO 80120
303.794.4727 | www.SterlingDesignAssociates.com

PREPARED UNDER THE DIRECT SUPERVISION OF
JAY M. NEWELL, PE
COLORADO REGISTRATION 35219
FOR & ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC


COLORADO REGISTERED
JAY M. NEWELL
35219
PROFESSIONAL ENGINEER

8 / 10 / 22

STERLING DESIGN ASSOCIATES, LLC

ISSUES & REVISIONS
NO.: 1 DATE: BY:
DESCRIPTION:
NO.: 2 DATE: - BY: -
DESCRIPTION: -
NO.: 3 DATE: - BY: -
DESCRIPTION: -
NO.: 4 DATE: - BY: -
DESCRIPTION: -
NO.: 5 DATE: - BY: -
DESCRIPTION: -
NO.: 6 DATE: - BY: -
DESCRIPTION: -

DATE: **08/2022**
SCALE: **N/A**
PROJECT MANAGER: **JS**
PROJECT NO.:
DRAWN BY: **JN**
DRAWING FILE:

PROJECT:

**SPACE VILLAGE FILING NO. 4**
**EL PASO COUNTY, CO**

CLIENT:

COMMERCIAL BUILDING SERVICES
7561 S. GRANT STR., SUITE A-4
LITTLETON, COLORADO 80122

TEL: (303) 730-3001

SHEET TITLE:

**GRADING & EROSION CONTROL COVER SHEET (SWMP-SITE MAP)**

SHEET NUMBER:

**1** **C900**

Revised.

Please remove "El Paso County" from the heading on this page as these are not standard notes by El Paso County.

# SPACE VILLAGE FILING NO. 4
## A PORTION OF THE NW 1/4 OF SEC. 17, T14S, R65W, OF THE 6th P.M., EL PASO COUNTY, COLORADO
## PRELIMINARY DRAINAGE PLAN

## EL PASO COUNTY STANDARD NOTES

1. ALL MATERIALS, WORKMANSHIP, AND CONSTRUCTION OF IMPROVEMENTS SHALL MEET OR EXCEED THE GOVERNING CITY, COUNTY AND/OR STATE AND APPLICABLE UTILITY DISTRICT STANDARDS AND SPECIFICATIONS, AND APPLICABLE STATE AND FEDERAL REGULATIONS. WHERE THERE IS CONFLICT BETWEEN THESE PLANS AND ANY APPLICABLE STANDARDS, THE HIGHER QUALITY STANDARD SHALL APPLY. ALL WORK SHALL BE INSPECTED AND APPROVED BY THE CITY AND APPLICABLE UTILITY DISTRICT(S).
2. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS, AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB ON SITE AT ALL TIMES.
3. ALL REFERENCES TO ANY PUBLISHED STANDARDS SHALL REFER TO THE LATEST REVISION OF SAID STANDARDS, UNLESS SPECIFICALLY STATED OTHERWISE.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR THE COMPLETION OF THE INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED TO BE PROVIDED, INSTALLED, CONSTRUCTED, REMOVED, AND RELOCATED UNLESS SPECIFICALLY NOTED OTHERWISE.
5. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR RECEIVING, UNLOADING, STORING, AND UNCRATING ALL EQUIPMENT FURNISHED BY THE OWNER/DEVELOPER AND DELIVERED TO THE SITE.
6. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES, AS SHOWN ON THESE PLANS, IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS, ESPECIALLY AT THE CONNECTION POINTS AND AT POTENTIAL UTILITY CONFLICTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES THAT CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.
7. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH THE GOVERNING CITY, COUNTY, AND/OR STATE AND ALL UTILITY COMPANIES/DISTRICTS INVOLVED WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION AND TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL PARTIES AFFECTED BY ANY DISRUPTION OF ANY UTILITY SERVICE.
8. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL UTILITY RELOCATIONS, WHETHER SHOWN OR NOT SHOWN ON THE PLANS.
9. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES/DISTRICTS TO OBTAIN TEMPORARY POWER, TELEPHONE AND WATER SERVICE DURING CONSTRUCTION. ALL COST FOR TEMPORARY SERVICES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND LICENSES FOR WORK INCLUDING, BUT NOT LIMITED TO DEMOLITION, STREET CUTS, UTILITY INTERFERENCES, TRAFFIC CONTROL, GRADING, AND UTILITY FROM ALL APPLICABLE AGENCIES; AND FOR COMPLYING WITH ALL PROVISIONS INCLUDED THEREIN.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS OF PROJECT SAFETY INCLUDING, BUT NOT LIMITED TO, EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY.
12. THE CONTRACTOR SHALL INSTALL AND MAINTAIN CONSTRUCTION FENCE PRIOR TO, AND THROUGHOUT CONSTRUCTION.
13. UTILITY TRENCHES ARE TO BE SLOPED OR BRACED AND SHEETED AS NECESSARY TO FURNISH SAFE WORKING CONDITIONS FOR THE WORKMEN AND THE PROTECTION OF OTHER UTILITIES IN COMPLIANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL HEALTH AND SAFETY RULES AND REGULATIONS.
14. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN, IN ACCORDANCE WITH THE M.U.T.C.D. TO THE APPROPRIATE RIGHT-OF-WAY AUTHORITY (CITY, COUNTY, OR STATE) FOR APPROVAL, PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN, OR AFFECTING, THE RIGHT-OF-WAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY AND ALL TRAFFIC CONTROL DEVICES AS MAY BE REQUIRED BY THE CONSTRUCTION ACTIVITIES.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WORK, INSPECTIONS, AND CERTIFICATIONS AS REQUIRED BY THE CITY, STATE, OR LOCAL DISTRICTS. ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED SHALL BE PERFORMED PRIOR TO ANNOUNCED BUILDING POSSESSION AND THE FINAL CONNECTION OF SERVICES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COST ASSOCIATED WITH INSPECTION AND CERTIFICATION UNLESS OTHERWISE ARRANGED WITH THE OWNER/DEVELOPER; AND SHALL COORDINATE ALL CERTIFICATIONS, AND PROVIDE FIELD SURVEYED AS-BUILT INFORMATION FOR REVIEW BY THE OWNER/DEVELOPER AND/OR ENGINEER AS EARLY AS POSSIBLE IN THE CONSTRUCTION SCHEDULE TO AVOID POTENTIAL DELAYS.
16. THE CONTRACTOR SHALL NOTIFY THE GOVERNING CITY, COUNTY, AND/OR STATE AND LOCAL UTILITY COMPANIES/DISTRICTS AT LEAST 48 HOURS PRIOR TO THE START OF ANY CONSTRUCTION.
17. THE CONTRACTOR SHALL NOTIFY THE GOVERNING CITY, COUNTY, AND/OR STATE AND LOCAL UTILITY COMPANIES/DISTRICTS AT LEAST 48 HOURS PRIOR TO THE START OF ANY EARTH DISTURBING ACTIVITY.
18. ALL STRUCTURAL EROSION CONTROL MEASURES SHALL BE INSTALLED AT THE LIMITS OF CONSTRUCTION, PRIOR TO ANY GROUND-DISTURBING ACTIVITY. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED IN GOOD REPAIR BY THE CONTRACTOR UNTIL SUCH TIME AS THE ENTIRE DISTURBED AREA IS STABILIZED WITH HARD SURFACE OR PERMANENT LANDSCAPING. THE CONTRACTOR IS RESPONSIBLE FOR REFERRING TO ANY EROSION AND SEDIMENT CONTROL, STORMWATER MANAGEMENT, STORMWATER POLLUTION PREVENTION, OR SIMILAR PLAN AND/OR NARRATIVE AND ASSOCIATED PERMITS INCLUDING, BUT NOT LIMITED TO GRADING PERMITS; AND COMPLYING WITH THE REQUIREMENTS THEREIN.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ROADWAYS FREE AND CLEAR OF ALL CONSTRUCTION DEBRIS AND DIRT TRACKED FROM THE SITE.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION OF ANY EXISTING IMPROVEMENTS INCLUDING, BUT NOT LIMITED TO STREET PAVEMENT, FENCES, SOD, LANDSCAPING, SPRINKLER SYSTEMS, AND UTILITIES DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL LOCATION AND CONDITION.
21. INCLUDED IN THIS PACKAGE IS THE DEMOLITION AND DISPOSAL OF ALL EXISTING UTILITIES, SITE IMPROVEMENTS AND SITE FURNISHINGS NEEDED FOR CONSTRUCTION OF THE IMPROVEMENTS SHOWN IN THIS SET OF CONSTRUCTION DRAWINGS. ALL QUESTIONS IN REGARD TO DEMOLITION SHALL BE SUBMITTED TO THE OWNER IN WRITING PRIOR TO BID.
22. ALL DEMOLITION, REMOVAL, DISPOSAL AND ABANDONMENT OF UTILITIES, STRUCTURES, SITE IMPROVEMENTS AND SITE FURNISHINGS SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL STANDARDS AND SPECIFICATIONS, AND PERMIT REQUIREMENTS.
23. DIMENSIONS FOR LAYOUT AND CONSTRUCTION ARE NOT TO BE SCALED FROM ANY DRAWING. IF PERTINENT DIMENSIONS ARE NOT SHOWN, CONTACT THE CONSULTING ENGINEER FOR CLARIFICATION, AND ANNOTATE THE DIMENSION ON THE AS-BUILT RECORD DRAWINGS.
24. RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATIONS. THE CONTRACTOR SHALL USE PRECAST CONCRETE ADJUSTMENT RINGS, GROUT, AND STEEL SHIMS TO ADJUST THE MANHOLE FRAMES TO THE REQUIRED FINAL GRADE IN CONFORMANCE WITH THE CITY OR UTILITY COMPANY/DISTRICT STANDARD SPECIFICATIONS. ALL FRAMES SHALL BE ADJUSTED TO FINISH GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
25. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT AT THE CONSTRUCTION SITE WHICH SHALL BE AVAILABLE TO THE GOVERNING CITY, COUNTY, AND/OR STATE AND UTILITY DISTRICT INSPECTOR AT ALL TIMES.
26. AS-BUILT PLANS AND FIELD NOTES SHALL BE PROVIDED BY THE CONTRACTOR TO THE CITY, COUNTY, STATE, FEDERAL OR UTILITY DISTRICT; OR TO THE OWNER/DEVELOPER AS REQUIRED BY AND IN ACCORDANCE WITH THE GOVERNING AUTHORITY'S OR OWNER/DEVELOPER'S CRITERIA. THE CONTRACTOR SHALL CONFIRM ANY REQUIREMENTS AS EARLY AS POSSIBLE IN THE CONSTRUCTION SCHEDULE TO ACCOUNT FOR PREPARATION AND REVIEW OF THE INFORMATION TO AVOID POTENTIAL DELAYS.
27. NO REVISIONS SHALL BE MADE TO THESE PLANS WITHOUT THE APPROVAL OF THE OWNER/DEVELOPER AND THE ENGINEER OF RECORD.
28. IF, DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED BY THE CONTRACTOR, HIS SUBCONTRACTORS, OR OTHER AFFECTED PARTIES, WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED IN THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE PROJECT MANAGER FOR THE OWNER/DEVELOPER AND THE ENGINEER IMMEDIATELY.
29. BENCHMARK VERIFICATION: THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS AND PROPOSED ELEVATIONS IN THIS CONSTRUCTION PLAN SET AGAINST THE PROJECT BENCHMARK, IDENTIFIED HEREIN, PRIOR TO COMMENCING WORK.
30. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH THE GOVERNING AUTHORITY'S STANDARDS AND SPECIFICATIONS.
31. THE SITE CONSTRUCTION PLANS LISTED WITHIN THIS PLAN SET ARE NOT FOR CONSTRUCTION UNLESS APPROVED BY THE APPROPRIATE GOVERNING JURISDICTION. THE CONTRACTOR SHALL CONFIRM SAID APPROVAL PRIOR TO CONSTRUCTION.
32. THE SITE CONSTRUCTION PLANS INDICATE THE WORK TO BE COMPLETED FOR THE PROJECT. THE CONTRACTOR SHALL COORDINATE SAID WORK WITH THE OWNER AND THE TENANT CONSTRUCTION MANAGER(S) TO CONFIRM THE LIMITS AND DETAILS OF THE WORK TO BE PROVIDED AND COMPLETED. CONSTRUCTION SHALL ALSO BE COORDINATED WITH TENANT IMPROVEMENT PLANS AND LANDLORD WORKLETTER.
33. IF, DURING THE OVERLOT GRADING PROCESS, CONDITIONS ARE ENCOUNTERED BY THE CONTRACTOR, HIS SUBCONTRACTORS, OR OTHER AFFECTED PARTIES, WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED IN THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE GEOTECHNICAL ENGINEER IMMEDIATELY FOR RECOMMENDATIONS.
34. ALL EARTHWORK, GRADING, OVERLOT GRADING, BACKFILLING, FILLING, EXCAVATION, COMPACTION, PAVEMENT, AND FLATWORK CONSTRUCTION WILL BE IN ACCORDANCE WITH THE RECOMMENDATIONS FROM A GEOTECHNICAL INVESTIGATION PREPARED SPECIFICALLY FOR THIS SITE.
35. ALL CONCRETE PAVEMENT, CONCRETE FLATWORK, CONCRETE STRUCTURES AND CONCRETE UTILITIES SHALL BE IN ACCORDANCE WITH THE MATERIAL RECOMMENDATIONS FROM A GEOTECHNICAL INVESTIGATION PREPARED SPECIFICALLY FOR THIS SITE.
36. THE EARTHWORK FOR ANY BUILDING FOUNDATIONS AND SLABS SHALL BE IN ACCORDANCE WITH ARCHITECTURAL AND STRUCTURAL PLANS AND SPECIFICATIONS, AND THE GEOTECHNICAL INVESTIGATION.
37. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS WHICH DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS AND SPECIFIC PROFILE DESIGN SHALL BE USED FOR SETTING ELEVATIONS OF CURB AND GUTTER AND UTILITIES.
38. SPOT ELEVATIONS REPRESENT FLOWLINE (BOTTOM FACE OF CURB) WHERE SHOWN AT CURB AND GUTTER UNLESS OTHERWISE NOTED.
39. CONTOURS SHOWN ARE FOR FINISHED PAVING, SIDEWALK, SLAB, OR GROUND. ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY.
40. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.
41. THE CONTRACTOR SHALL HAVE FORMS CHECKED BY A SURVEYOR FOR INSTALLATIONS OF CURB & GUTTER OR CROSSPANS ADJACENT TO EXISTING PAVING. THE CROSS SLOPE SHALL NOT BE LESS THAN 2% OR GREATER THAN 4% FROM THE ESTABLISHED SAWCUT LINE TO THE PROPOSED EDGE OF CONCRETE. DO NOT PLACE CONCRETE IN APPLICABLE FORMS THAT HAVE NOT BEEN CHECKED, DO NOT PROVIDE CROSS SLOPES WITHIN THE SPECIFIED RANGE, OR APPEAR IN ANY WAY INCONSISTENT WITH SMOOTH AND CONTINUOUS TRAFFIC AND PEDESTRIAN OPERATIONS. CONTACT THE ENGINEER IMMEDIATELY FOR CLARIFICATIONS OR CORRECTIONS.
42. THE CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
43. THE CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL LANDSCAPED AND PAVED AREA.
44. ALL DISTURBED AREAS THAT ARE NOT DESIGNATED TO BE PAVED SHALL BE LANDSCAPED OR SEEDED, ACCORDING TO THE LANDSCAPE PLAN.
45. EXISTING DRAINAGE STRUCTURES SHALL BE INSPECTED AND REPAIRED AS NEEDED, AND EXISTING PIPES CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.
46. IF ANY EXISTING STRUCTURES, SIDEWALK, AND/OR CURB AND GUTTER, MODIFIED OR REMAINING, ARE DAMAGED DURING CONSTRUCTION, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER PRIOR TO PROJECT CLOSEOUT.
47. ALL GRATES, MANHOLE RIMS, VALVE BOXES, VALVE COVERS, CLEANOUTS, AND VAULT OR BOX COVERS SHALL BE ADJUSTED TO THE "AS CONSTRUCTED" FINISHED GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
48. NO PROPOSED SLOPE IN LANDSCAPED AREAS OR OPEN SPACE SHALL EXCEED THREE (3) HORIZONTAL FEET TO ONE (1) VERTICAL FOOT, OR AS OTHERWISE SPECIFIED BY LOCAL CRITERIA.
49. THE CONTRACTOR SHALL PROTECT THE PROJECT BENCHMARK THROUGHOUT CONSTRUCTION AND SET ADDITIONAL PROJECT BENCHMARKS AS NECESSARY TO MAINTAIN VERTICAL CONTROL THROUGHOUT THE DURATION OF THE PROJECT.
50. THE CONTRACTOR SHALL FILL AND COMPACT BASEMENTS, CESSPOOLS, AND OTHER LARGE EXCAVATED AREAS WITH CLEAN FILL SUITABLE TO THE OWNER, AND IN ACCORDANCE WITH RECOMMENDATIONS OBTAINED FROM THE GEOTECHNICAL INVESTIGATION OR GEOTECHNICAL ENGINEER AND GRADE TO MATCH EXISTING OR PROPOSED FINISH GRADE; OR CONFIRM SUCH WORK HAS BEEN PERFORMED PRIOR TO CONSTRUCTION.
51. SITE IMPROVEMENTS ARE REQUIRED TO BE COVERED UNDER THE COLORADO DISCHARGE PERMIT SYSTEM (CDPS) GENERAL PERMIT COR400000 FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES AS WELL AS EL PASO COUNTY REGULATIONS. STATE PERMIT APPLICATION SHALL BE MADE WITH THE COLORADO DEPARTMENT OF HEALTH & THE ENVIRONMENT THROUGH THE COLORADO ENVIRONMENTAL ONLINE SYSTEM (CEOS) ACCESSIBLE AT HTTPS://CEOS.COLORADO.GOV/CO/CEOS/PUBLIC. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING, COMPLETING, AND SUBMITTING ANY EL PASO COUNTY APPLICATION OR RELATED DOCUMENTS.
52. PERMIT(S) COVERAGE REQUIRES THE DEVELOPMENT OF A STORMWATER MANAGEMENT PLAN (PLAN) IDENTIFYING AND ADDRESSING THE FOLLOWING ITEMS SPECIFIC TO THIS CONSTRUCTION ACTIVITY: (A) QUALIFIED STORMWATER MANAGER, (B) SPILL PREVENTION AND RESPONSE PLAN, (C) MATERIALS HANDLING, (D) POTENTIAL SOURCES OF POLLUTION, (E) IMPLEMENTATION OF CONTROL MEASURES, (F) SITE DESCRIPTION, (G) SITE MAP, (H) FINAL STABILIZATION AND LONG TERM STORMWATER MANAGEMENT, AND (I) SITE INSPECTION REPORTS.
53. STERLING DESIGN ASSOCIATES, LLC HAS PREPARED AND MADE AVAILABLE A PLAN FOR THE OWNER PROVIDING FOR LOCAL JURISDICTIONAL ENTITLEMENT REVIEW, ONLY. THE PLAN IS INCOMPLETE WITHOUT ADDITIONAL INPUT FROM THE OPERATOR; INCLUDING, BUT NOT LIMITED TO, IDENTIFICATION OF THE PROJECT STORMWATER MANAGER AND INCLUSION OF A DETAILED CONSTRUCTION AND CONTROL MEASURE IMPLEMENTATION SCHEDULE. THE OPERATOR IS SOLELY RESPONSIBLE FOR COMPLETENESS AND IMPLEMENTATION OF A PLAN COMPLIANT WITH THE CDPS COR400000 AND LOCAL PERMIT REQUIREMENTS AT ALL TIMES OF SITE PERMIT COVERAGE.
54. THE OWNER AND OPERATOR MUST IMPLEMENT THE PROVISIONS OF THE PLAN AS WRITTEN AND AS MAY BE UPDATED, FROM COMMENCEMENT OF CONSTRUCTION ACTIVITY UNTIL FINAL STABILIZATION IS COMPLETE.
55. THE OPERATOR SHALL ENSURE ALL MATERIALS IMPORTED OR EXPORTED FROM THE SITE ARE PROPERLY SECURED AND COVERED TO PREVENT LOSS DURING TRANSPORT. ALL HAUL ROUTES SHALL BE DOCUMENTED WITHIN THE PLAN. ALL OFF-SITE SPOIL, BORROW, AND WASTE DISPOSAL FACILITIES SHALL BE PROPERLY PERMITTED FOR OPERATION.

Know what's below. Call before you dig.

## CAUTION - NOTICE TO CONTRACTOR

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THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING IMPROVEMENTS AND UTILITIES AND SHALL REPAIR ANY DAMAGE AT HIS EXPENSE.


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PREPARED UNDER THE DIRECT SUPERVISION OF
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FOR & ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC

COLORADO REGISTERED JAY M. NEWELL 35219 PROFESSIONAL ENGINEER

8 / 10 / 22

STERLING DESIGN ASSOCIATES, LLC


ISSUES & REVISIONS

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| DATE: **08/2022** | SCALE: **N/A** |
| PROJECT MANAGER: **JS** | PROJECT NO.: |
| DRAWN BY: **JN** | DRAWING FILE: |

PROJECT:

**SPACE VILLAGE FILING NO. 4**
**EL PASO COUNTY, CO**

CLIENT:

COMMERCIAL BUILDING SERVICES
7561 S. GRANT STR., SUITE A-4
LITTLETON, COLORADO 80122

TEL: (303) 730-3001

SHEET TITLE:

**GRADING & EROSION CONTROL NOTES (SWMP-SITE MAP)**

SHEET NUMBER:

**2** **C901**

# SPACE VILLAGE FILING NO. 4

## A PORTION OF THE NW 1/4 OF SEC. 17, T14S, R65W OF THE 6TH P.M., EL PASO COUNTY, COLORADO

## EROSION CONTROL PLAN

Check dams to be installed a minimum of every 1.5' of vertical fall. Notate spacing and/or include a table for multiple slopes, based on your selected detail, per the example table shown here:

Spacing noted on plan.

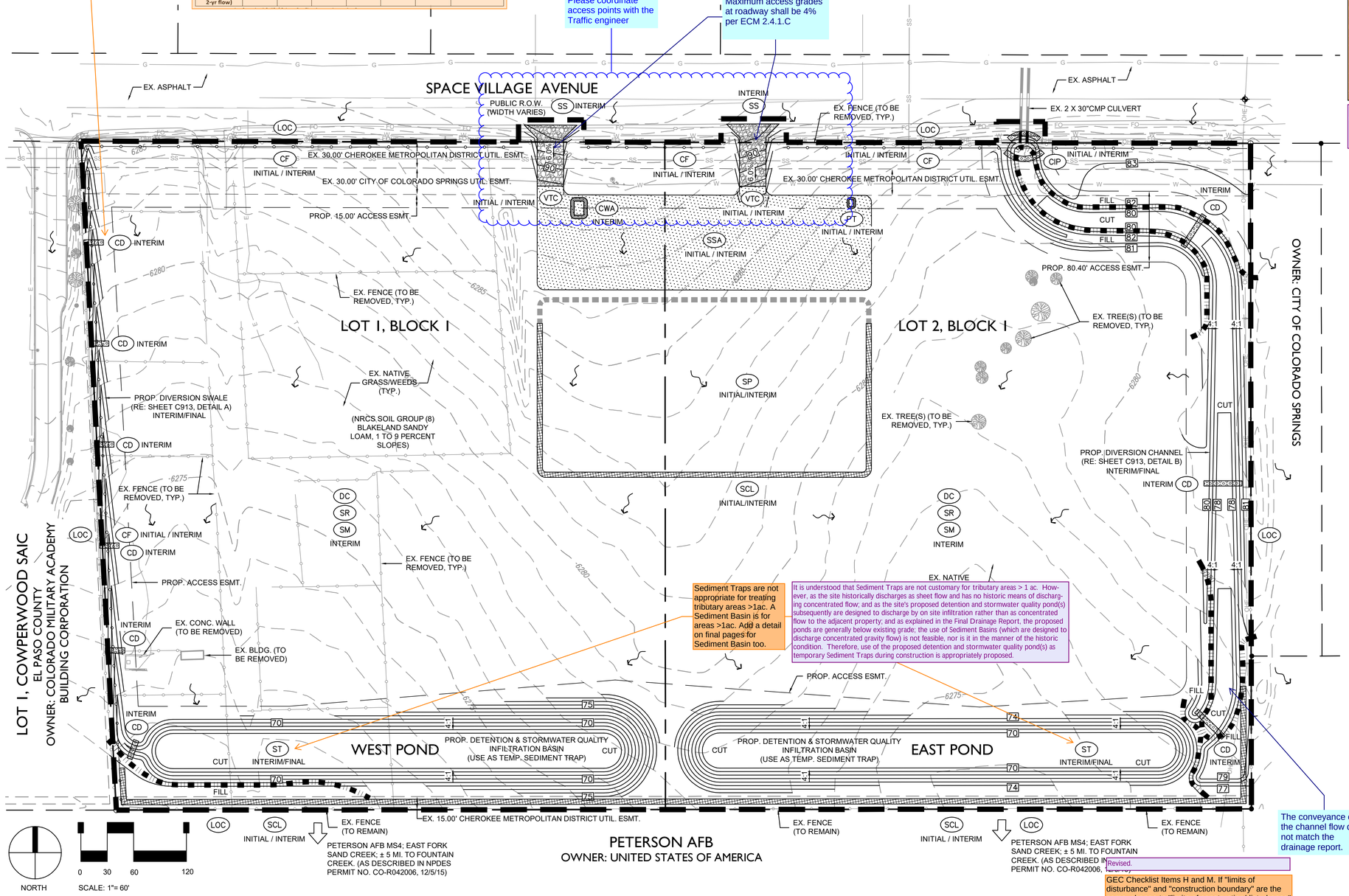
| Slope of Ditch Flow Line | 2% | 3% | 4% | 5% | 6% | Reference | Type |
|---|---|---|---|---|---|---|---|
| Spacing (ft) (H = 0.5ft) | 25 | 16.7 | 12.5 | 10 | 8.3 | CDOT, MHFD, DCMv2 | SCL (9" Straw Wattle, buried 3") |
| Spacing (ft) (H = 1.5ft) | 75 | 50 | 37.5 | 30 | 25 | MHFD | Rock |
| Spacing (ft) (H = 2.0ft) | 100 | 67 | 50 | 40 | 33 | CDOT | Rock |
| Spacing (ft) (H = to convey 2-yr flow) | TBD | TBD | TBD | TBD | TBD | DCMv2 | Rock |

Revised per Traffic Engineer (Tuttle Transportation Group) correspondence: "...accesses should be fine in the location they are set at..."

Revised to provide 2% from existing edge of pavement for 30'.

Please coordinate access points with the Traffic engineer

Maximum access grades at roadway shall be 4% per ECM 2.4.1.C




Sediment Traps are not appropriate for treating tributary areas >1ac. A Sediment Basin is for areas >1ac. Add a detail on final pages for Sediment Basin too.

It is understood that Sediment Traps are not customary for tributary areas > 1 ac. However, as the site historically discharges as sheet flow and has no historic means of discharging concentrated flow; and as the site's proposed detention and stormwater quality pond(s) subsequently are designed to discharge by on site infiltration rather than as concentrated flow to the adjacent property; and as explained in the Final Drainage Report, the proposed ponds are generally below existing grade; the use of Sediment Basins (which are designed to discharge concentrated gravity flow) is not feasible, nor is it in the manner of the historic condition. Therefore, use of the proposed detention and stormwater quality pond(s) as temporary Sediment Traps during construction is appropriately proposed.

The conveyance of the channel flow does not match the drainage report.

Drainage Report revised to match plan(s).

Revised.

GEC Checklist Items H and M. If "limits of disturbance" and "construction boundary" are the same, change to "limits of construction/disturbance" or otherwise show as separate line types for each on the legend and figure.

Provide details for pond. To expedite the review process, I have preemptively provided our most common review comments on pond plans and details for you to consider when preparing the details:

- Emergency Spillway: provide bedding material/geotextile fabric between riprap and sub-base (per DCMv1 – Chap 10.10.5). Does not apply to spillways using soil riprap.
- Forebay: For a depth of 2.5 ft or greater, forebay requires ramp into bottom and access road leading to the street.
- Forebay Baffles: Per MHFD USDCMv2 Chap 9, Section 3.2.4 (pdf pages 89 to 99), baffles are required for inlet pipes up to 48" diameter.
- Maintenance Roadway: Stabilized access ramp shall be a minimum of 15ft wide and no greater than 12% slope, in accordance with DCMv1, Chap 11.2.2. Provide roadway detail/cross section, including stone sizing and gradation. Consider using a base course that will minimize migration of fines when the pond is detaining water.
- Orifice Plate: Orifice plate requires a gasket or sealant to ensure a watertight seal with outlet structure. Bolts or other method of attachment along the bottom needs to be shown.
- Outlet Pipe: Per DCMv2 Section 4.3, outlet pipe should be 18" minimum.
- Pond Bottom: Pond bottom should have a minimum slope of 3% to the trickle channel and micropool (USDCM Vol 3, detail T-5). Please adjust to minimize future maintenance needs.
- Trickle Channel: Consider having control joints every ~10ft.
- Include callout for pet waste station(s) around the pond, with signage stating that pet waste must be picked up.
- Trash Rack: Trash rack to be Amico Klemp KRP Series aluminum bar grate (Figure 6-b), US Filter or Johnson stainless steel well screen with #93 VEE wire (Figure 6-a), or equivalent (per EPC DCMv2, Chap 4.3 and MHFD Detail T-12).

The pond(s) are designed as infiltration basins. Therefore they do not include the appurtenances typical of other types of ponds (e.g. forebays, trickle channels, micro-pools, outlet structures, trash racks, sloped bottoms, etc.) Subsequently, additional detail is unnecessary.

## BENCHMARK

AS PROVIDED ON *ALTA/NSPS LAND TITLE SURVEY* PREPARED BY ALTURA LAND CONSULTANTS, DATED APRIL 28, 2022 FOR THIS PROJECT:

"NGS BENCHMARK "R 76" - LOCATED 0.2 MILE EAST ALONG HIGHWAY 94, FROM PETERSON ROAD, 22 FEET SOUTH-SOUTHEAST OF THE SOUTHEAST CORNER OF AN ADDITION TO THE BUILDING (SANDY'S RESTAURANT), 48 FEET NORTH OF THE CENTERLINE OF THE HIGHWAY, 3.5 FEET SOUTH OF A POWER POLE AND 3 FEET SOUTH OF A FIBERGLASS WITNESS POST. ELEVATION = 6289.86 FEET (NAVD 1988)"

## GENERAL NOTES

1. REFER TO SHEETS C900 AND C901 FOR PROJECT GENERAL NOTES.
2. THE PLAN SHALL NOT SUBSTANTIALLY CHANGE THE DEPTH OF COVER, OR ACCESS TO UTILITY FACILITIES. ADDITIONALLY, THE PLAN SHALL NOT INCREASE OR DIVERT WATER TOWARDS UTILITY FACILITIES. ANY CHANGES TO UTILITY FACILITIES TO ACCOMODATE THE PLAN, MUST BE DISCUSSED AND AGREED TO BY THE AFFECTED UTILITY PRIOR TO IMPLEMENTING THE PLAN. THE RESULTING COST TO RELOCATE OR PROTECT UTILITIES, OR PROVIDE INTERIM ACCESS IS AT THE EXPENSE OF THE PLAN APPLICANT.

## CUT/FILL SUMMARY

| | | | |
|---|---|---|---|
| CUT | = | ± | 17,941 CY |
| FILL | = | ± | 1,248 CY |
| EXPORT | = | ± | 16,693 CY |
| (EXPORT OVER 22.8 AC. = 0.45') | | | |
| FINAL EXPORT | = | ± | 0 CY |

CUT AND FILL ANALYSIS IS FROM EXISTING FINISH GRADE TO PROPOSED FINISH GRADE AND DOES NOT ACCOUNT FOR COMPACTION, SHRINK/SWELL, PAVEMENT SECTIONS, ETC., AND IS THEREFORE APPROXIMATE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.

## CAUTION - NOTICE TO CONTRACTOR

Know what's below. Call before you dig.

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THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING IMPROVEMENTS AND UTILITIES AND SHALL REPAIR ANY DAMAGE AT HIS EXPENSE.

## LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- EASEMENT LINE
- EXIST. MAJOR CONTOUR
- EXIST. MINOR CONTOUR
- PROP. CONTOUR
- EXIST. FENCE
- EXIST. EDGE OF ASPHALT
- EXIST. CURB AND GUTTER
- EXIST. OVERHEAD ELECTRIC
- EXIST. SANITARY SEWER
- EXIST. WATERLINE
- EXIST. GAS LINE
- EXIST. ELECTRIC
- EXIST. TELEPHONE
- EXIST. FIBER OPTIC
- PROP. CONCRETE
- LOC — LIMITS OF CONSTRUCTION
- CF — CONSTRUCTION FENCE (TYPE = FENCE (TYP. ALL))
- SCL — SEDIMENT CONTROL LOG
- CD — CHECK DAM
- DISCHARGE POINT
- FLOW DIRECTION
- VTC — VEHICLE TRACKING CONTROL (PRE-MANUFACTURED MAT) (FOR USE ON TOP OF EXISTING PAVEMENT)
- SSA — STABILIZED STAGING AREA
- CWA — CONCRETE WASHOUT AREA
- CUT/FILL LIMIT
- PT — PORTABLE TOILET(S)
- CIP — CULVERT INLET PROTECTION
- ST — SEDIMENT TRAP
- SR — SURFACE ROUGHENING
- SM — SEEDING & MULCHING
- DC — DUST CONTROL
- SS — STREET SWEEPING
- SP — STOCKPILE MANAGEMENT


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PREPARED UNDER THE DIRECT SUPERVISION OF
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COLORADO REGISTERED JAY M. NEWELL 35219 PROFESSIONAL ENGINEER

8 / 10 / 22

STERLING DESIGN ASSOCIATES, LLC


ISSUES & REVISIONS

NO.: 1 DATE: BY:
DESCRIPTION:
NO.: 2 DATE: - BY: -
DESCRIPTION: -
NO.: 3 DATE: - BY: -
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NO.: 4 DATE: - BY: -
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NO.: 5 DATE: - BY: -
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NO.: 6 DATE: - BY: -
DESCRIPTION: -

DATE: 08/2022
SCALE: 1" = 60'-0"
PROJECT MANAGER: JS
PROJECT NO.:
DRAWN BY: JN
DRAWING FILE:

PROJECT:

**SPACE VILLAGE FILING NO. 4**
**EL PASO COUNTY, CO**

CLIENT:

COMMERCIAL BUILDING SERVICES
7561 S. GRANT STR., SUITE A-4
LITTLETON, COLORADO 80122

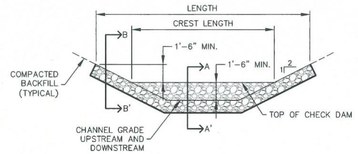
TEL: (303) 730-3001

SHEET TITLE:

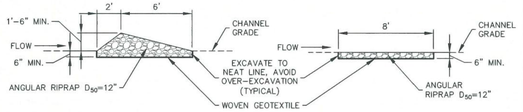
**GRADING & EROSION CONTROL PLAN (SWMP-SITE MAP)**

SHEET NUMBER:

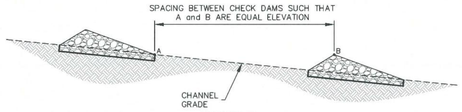
**3** **C905**




CHECK DAM ELEVATION VIEW




SECTION A-A' SECTION B-B'




PROFILE

INSTALLATION NOTES

1. CHECK DAMS SHOULD BE INSTALLED BEFORE UPSTREAM LAND DISTURBING ACTIVITIES.
2. RIPRAP PAD SHOULD BE TRENCHED INTO GROUND BY A MINIMUM OF 6".

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES ½ THE HEIGHT OF THE CHECK DAM CREST.
3. CHECK DAMS MUST REMAIN UNTIL THE UPSTREAM DISTURBANCE AREA IS STABILIZED.
4. PERMANENTLY STABILIZE AREA AFTER CHECK DAMS ARE REMOVED IF REMOVAL IS REQUIRED.

CD

STORMWATER ENTERPRISE — CHECK DAM

| APPROVED: SMENT MANAGER | | |
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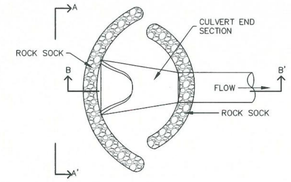
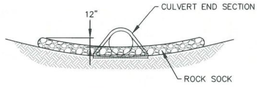
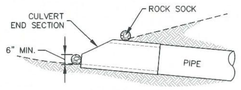
| ISSUED: 10/7/19 | REVISED: 8/19/2020 | DRAWING NO. 900-CD |




CULVERT INLET PROTECTION PLAN




SECTION A-A'




SECTION B-B'

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ACCUMULATED SEDIMENT UPSTREAM OF THE CULVERT SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS ½ HEIGHT OF THE ROCK SOCK.
3. CULVERT INLET PROTECTION SHALL REMAIN UNTIL THE UPSTREAM AREA IS PERMANENTLY STABILIZED.

CIP

STORMWATER ENTERPRISE — CULVERT INLET PROTECTION

| APPROVED: SMENT MANAGER | | |
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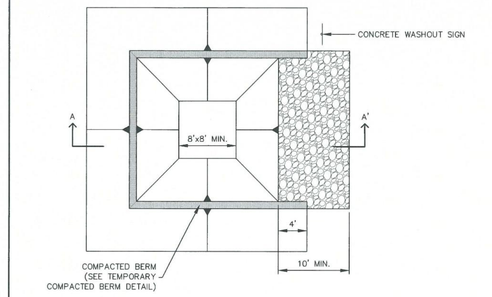
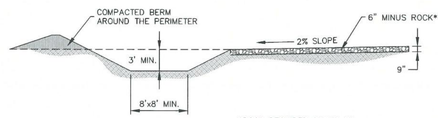
| ISSUED: 10/7/19 | REVISED: 8/19/2020 | DRAWING NO. 900-CIP |

( MODIFIED AUGUST 2022)




CONCRETE WASHOUT AREA PLAN




SECTION A-A'

*ROCK REQUIRED BASED ON SITE CONDITIONS AT THE DISCRETION OF THE GEC INSPECTOR

CWA

STORMWATER ENTERPRISE — CONCRETE WASHOUT AREA

| APPROVED: SMENT MANAGER | | |
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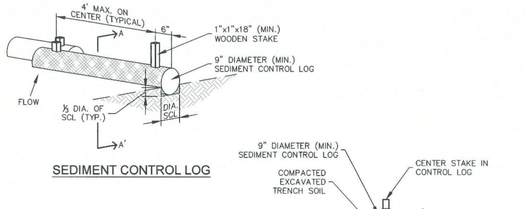
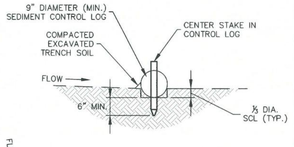
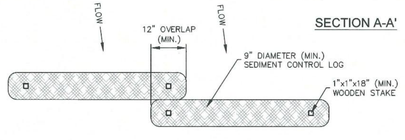
| ISSUED: 10/7/19 | REVISED: 8/19/2020 | DRAWING NO. 900-CWA-1 |




SEDIMENT CONTROL LOG




SECTION A-A'




SEDIMENT CONTROL LOG JOINTS

INSTALLATION NOTES

1. ALL SEDIMENT CONTROL LOGS MUST BE EMBEDDED TO ⅓ OF THE HEIGHT OF THE LOG
2. LARGER DIAMETER SEDIMENT CONTROL LOGS NEED TO BE EMBEDDED DEEPER.
3. PLACE SEDIMENT CONTROL LOG AGAINST SIDEWALK OR BACK OF CURB WHEN ADJACENT TO THESE FEATURES.
4. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR OR COCONUT FIBER, AND SHALL BR FREE FROM ANY NOXIOUS WEED SEEDS OF DEFECTS INCLUDING RIPS, HOLES AND OBVIOUS WEAR.
5. IF USING AS SLOPE PROTECTION, INSTALL SEDIMENT CONTROL LOGS ALONG THE CONTOUR.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES ½ OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.
3. PERMANENTLY STABILIZE AREA AFTER SEDIMENT CONTROL LOGS HAVE BEEN REMOVED.

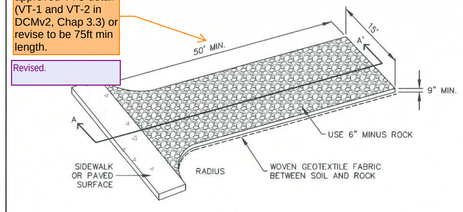
SCL

STORMWATER ENTERPRISE — SEDIMENT CONTROL LOGS

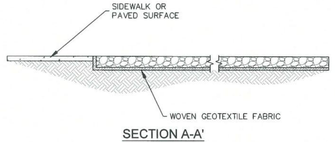
| APPROVED: SMENT MANAGER | | |
|---|---|---|
| ISSUED: 10/7/19 | REVISED: 8/19/2020 | DRAWING NO. 900-SCL |

replace with EPC approved VTC detail (VT-1 and VT-2 in DCMv2, Chap 3.3) or revise to be 75ft min length.

Revised.




AGGREGATE VEHICLE TRACKING CONTROL




SECTION A-A'

INSTALLATION NOTES

1. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHOULD BE LOCATED AT ALL POINTS WHERE VEHICLES EXIT THE CONSTRUCTION SITE TO ADJACENT ROADWAY.
2. STABILIZED CONSTRUCTION ENTRANCE/EXITS SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
3. RADIUS MUST BE ADEQUATE FOR INTENDED CONSTRUCTION VEHICLE TURNING.
4. ROCK SHOULD CONSIST OF 6" MINUS ROCK.
5. INSTALL CONSTRUCTION FENCE ON BOTH SIDES OF VEHICLE TRACKING CONTROL PAD WHEN NEEDED OR REQUIRED BY INSPECTOR.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. SEDIMENT TRACKED ONTO THE ADJACENT ROAD SHALL BE REMOVED DAILY, BY SWEEPING OR SHOVELING, AND NEVER WASHED DOWN STORM DRAINS.
3. ROUGHEN, REPLACE AND/OR ADD ROCK AS NEEDED TO MAINTAIN CONSISTENT DEPTH AND TO PREVENT SEDIMENT TRACKING ONTO ADJACENT STREET.
4. PERMANENTLY STABILIZE AREA AFTER VEHICLE TRACKING CONTROL IS REMOVED.

VTC

STORMWATER ENTERPRISE — VEHICLE TRACKING CONTROL

| APPROVED: SMENT MANAGER | | |
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INSTALLATION NOTES

1. SEE PLAN VIEW FOR: -LOCATION OF CONCRETE WASHOUT AREA
2. LOCATE AT LEAST 50' AWAY FROM STATE WATERS MEASURED HORIZONTALLY.
3. AN IMPERMEABLE LINER (16 MIL. MINIMUM THICKNESS) IS REQUIRED IF CONCRETE WASH AREA IS LOCATED WITHIN 400' OF STATE WATERS OR 1000' OF WELLS OR DRINKING WATER SOURCES.
4. DO NOT LOCATE IN AREAS WHERE SHALLOW GROUNDWATER MAY BE PRESENT.
5. THE CONCRETE WASH AREA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
6. CONCRETE WASH AREA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8'.
7. BERM SURROUNDING SIDES AND BACK OF CONCRETE WASH AREA SHALL HAVE A MINIMUM HEIGHT OF 2 FEET.
8. CONCRETE WASH AREA ENTRANCE SHALL BE SLOPED 2% TOWARDS THE CONCRETE WASH AREA.
9. SIGNS SHALL BE PLACED AT THE CONCRETE WASH AREA.
10. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. THE CONCRETE WASH AREA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS ACCUMULATED IN THE PIT SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF ⅓ THE HEIGHT OF THE CONCRETE WASH AREA.
3. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE, AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
4. THE CONCRETE WASH AREA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
5. PERMANENTLY STABILIZE AREA AFTER CONCRETE WASH AREA IS REMOVED.

CWA

STORMWATER ENTERPRISE — CONCRETE WASHOUT AREA

| APPROVED: SMENT MANAGER | | |
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8 / 10 / 22

STERLING DESIGN ASSOCIATES, LLC

ISSUES & REVISIONS

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| DATE: 08/2022 | SCALE: N/A |
| PROJECT MANAGER: JS | PROJECT NO.: |
| DRAWN BY: JN | DRAWING FILE: |

PROJECT:

**SPACE VILLAGE FILING NO. 4**
**EL PASO COUNTY, CO**

CLIENT:

COMMERCIAL BUILDING SERVICES
7561 S. GRANT STR., SUITE A-4
LITTLETON, COLORADO 80122

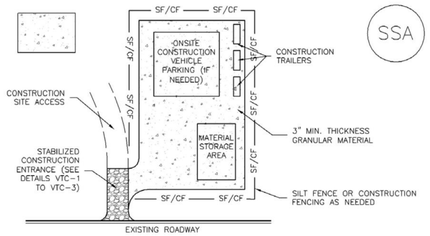
TEL: (303) 730-3001

SHEET TITLE:

**GRADING & EROSION CONTROL DETAILS (SWMP-SITE MAP)**

SHEET NUMBER:

**4** **C910**




## SSA-1. STABILIZED STAGING AREA

STABILIZED STAGING AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   -LOCATION OF STAGING AREA(S).
   -CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.

2. STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.

3. STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE.

4. THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR MATERIAL.

5. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

6. ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.

STABILIZED STAGING AREA MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

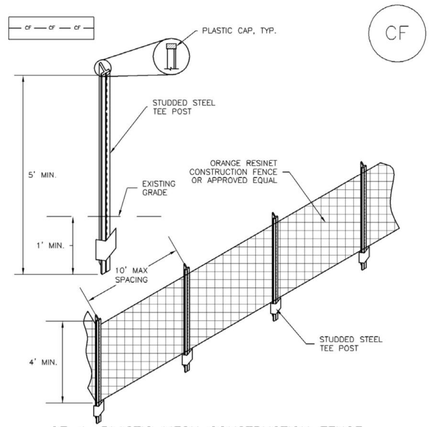
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.








## CF-1. PLASTIC MESH CONSTRUCTION FENCE

CONSTRUCTION FENCE INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   -LOCATION OF CONSTRUCTION FENCE.

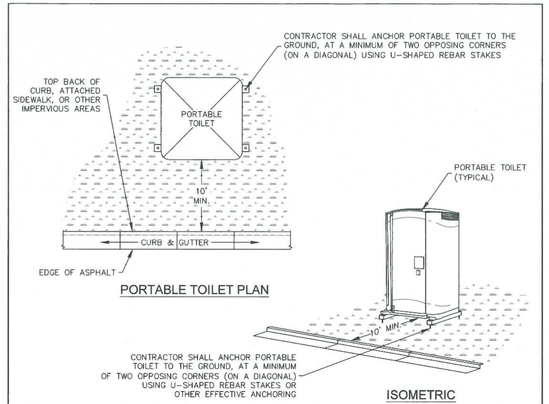
2. CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

3. CONSTRUCTION FENCE SHALL BE COMPOSED OF ORANGE, CONTRACTOR-GRADE MATERIAL THAT IS AT LEAST 4' HIGH. METAL POSTS SHOULD HAVE A PLASTIC CAP FOR SAFETY.

4. STUDDED STEEL TEE POSTS SHALL BE UTILIZED TO SUPPORT THE CONSTRUCTION FENCE. MAXIMUM SPACING FOR STEEL TEE POSTS SHALL BE 10'.

5. CONSTRUCTION FENCE SHALL BE SECURELY FASTENED TO THE TOP, MIDDLE, AND BOTTOM OF EACH POST.






INSTALLATION NOTES:

1. PORTABLE TOILETS SHALL BE PLACED A MINIMUM OF 10 FEET BEHIND ALL CURBS, SIDEWALKS, AND OTHER IMPERVIOUS AREAS; 50 FEET FROM STORM INLETS, AND 100 FEET FROM WATERWAYS.
2. PORTABLE TOILETS IN THE RIGHT-OF-WAY ARE REQUIRED TO BE PLACED ON MOBILE TRAILERS AND MUST BE ANCHORED OR WEIGHTED DOWN. PORTABLE TOILETS MAY BE INSTALLED IN ACCORDANCE WITH NOTE #1 IN STAGING AREAS/YARDS.
3. PORTABLE TOILETS SHALL BE SECURELY ANCHORED TO THE GROUND USING U-SHAPED REBAR STAKES, OR OTHER EFFECTIVE ANCHORING.
4. ANCHORING SHALL BE POSITIONED ON AT LEAST TWO OPPOSING (DIAGONAL) CORNERS.
5. TOILET CONTAINMENT PANS MAY BE USED IN PLACE OF A TRAILER AT THE GEC INSPECTOR'S DISCRETION. TOILET CONTAINMENT PANS MUST BE ANCHORED IN PLACE AND MUST NOT BE USED WITHIN THE CITY R.O.W.

PT

MAINTENANCE NOTES:

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. PORTABLE TOILETS SHALL BE SERVICED AT THE NECESSARY INTERVALS TO ELIMINATE THE POSSIBILITY OF OVERFLOW.
3. WHEN THE PORTABLE TOILETS ARE REMOVED, ANY DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE TOILETS MUST BE PERMANENTLY STABILIZED.

PORTABLE TOILET

APPROVED: SWENC MANAGER

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| 2/19/19 | 8/19/2020 | 900-PTM |

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8 / 10 / 22

STERLING DESIGN ASSOCIATES, LLC

ISSUES & REVISIONS

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| DATE: 08/2022 | SCALE: N/A |
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PROJECT:

**SPACE VILLAGE FILING NO. 4**
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CLIENT:

COMMERCIAL BUILDING SERVICES
7561 S. GRANT STR., SUITE A-4
LITTLETON, COLORADO 80122

TEL: (303) 730-3001

SHEET TITLE:

**GRADING & EROSION CONTROL DETAILS (SWMP-SITE MAP)**

SHEET NUMBER:

**5** **C911**



STABILIZED STAGING AREA MAINTENANCE NOTES

5. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.

6. THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

NOTE: MANY MUNICIPALITIES PROHIBIT THE USE OF RECYCLED CONCRETE AS GRANULAR MATERIAL FOR STABILIZED STAGING AREAS DUE TO DIFFICULTIES WITH RE-ESTABLISHMENT OF VEGETATION IN AREAS WHERE RECYCLED CONCRETE WAS PLACED.

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)





CONSTRUCTION FENCE MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. CONSTRUCTION FENCE SHALL BE REPAIRED OR REPLACED WHEN THERE ARE SIGNS OF DAMAGE SUCH AS RIPS OR SAGS. CONSTRUCTION FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

5. WHEN CONSTRUCTION FENCES ARE REMOVED, ALL DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE FENCE SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)





SEDIMENT TRAP INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   -LOCATION, LENGTH AND WIDTH OF SEDIMENT TRAP.

2. SEDIMENT TRAPS SHALL BE INSTALLED PRIOR TO ANY UPGRADIENT LAND-DISTURBING ACTIVITIES.

3. SEDIMENT TRAP BERM SHALL BE CONSTRUCTED FROM MATERIAL FROM EXCAVATION. THE BERM SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.

SEDIMENT TRAP MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

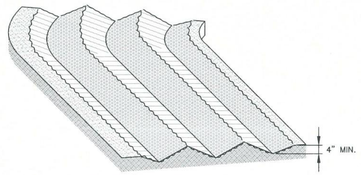
4. REMOVE SEDIMENT ACCUMULATED IN TRAP AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN THE SEDIMENT DEPTH REACHES ½ THE HEIGHT OF THE RIPRAP OUTLET.

5. SEDIMENT TRAPS SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

6. WHEN SEDIMENT TRAPS ARE REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.




SURFACE ROUGHENING

INSTALLATION NOTES

1. SURFACE ROUGHENING MAY BE USED IN AREAS FLATTER THAN 3:1. INSTALL FURROWS ALONG CONTOUR TO INTERCEPT SHEET FLOW.
2. SURFACE ROUGHENING MAY BE ACCOMPLISHED BY FURROWING, SCARIFYING, RIPPING OR DISKING THE SOIL.
3. FURROWS MUST BE A MINIMUM OF 4" IN DEPTH.
4. SURFACE ROUGHENING SHALL NOT BE USED ON EXTREMELY SANDY OR ROCKY SOILS. CONTRACTOR SHALL CONFIRM USE OF SURFACE ROUGHENING WITH COUNTY PRIOR TO ANY APPLICATION.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. VEHICLES AND EQUIPMENT SHALL NOT BE DRIVEN OVER AREAS THAT HAVE BEEN SURFACE ROUGHENED.

SR

STORMWATER ENTERPRISE | SURFACE ROUGHENING

APPROVED: SWENT MANAGER

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| 10/7/19 | 8/19/2020 | 900–SR |

( MODIFIED AUGUST 2022)

## SEEDING & MULCHING

ALL SOIL TESTING, SOILS AMENDMENT AND FERTILIZER DOCUMENTATION, AND SEED LOAD AND BAG TICKETS MUST BE ADDED TO THE CSWMP.

SOIL PREPARATION

1. IN AREAS TO BE SEEDED, THE UPPER 6 INCHES OF THE SOIL MUST NOT BE HEAVILY COMPACTED, AND SHOULD BE IN FRIABLE CONDITION. LESS THAN 85% STANDARD PROCTOR DENSITY IS ACCEPTABLE. AREAS OF COMPACTION OR GENERAL CONSTRUCTION ACTIVITY MUST BE SCARIFIED TO A DEPTH OF 6 TO 12 INCHES PRIOR TO SPREADING TOPSOIL TO BREAK UP COMPACTED LAYERS AND PROVIDE A BLENDING ZONE BETWEEN DIFFERENT SOIL LAYERS.
2. AREAS TO BE PLANTED SHALL HAVE AT LEAST 4 INCHES OF TOPSOIL SUITABLE TO SUPPORT PLANT GROWTH.
3. THE CITY RECOMMENDS THAT EXISTING AND/OR IMPORTED TOPSOIL BE TESTED TO IDENTIFY SOIL DEFICIENCIES AND ANY SOIL AMENDMENTS NECESSARY TO ADDRESS THESE DEFICIENCIES. SOIL AMENDMENTS AND/OR FERTILIZERS SHOULD BE ADDED TO CORRECT TOPSOIL DEFICIENCIES BASED ON SOIL TESTING RESULTS.
4. TOPSOIL SHALL BE PROTECTED DURING THE CONSTRUCTION PERIOD TO RETAIN ITS STRUCTURE AVOID COMPACTION, AND TO PREVENT EROSION AND CONTAMINATION. STRIPPED TOPSOIL MUST BE STORED IN AN AREA AWAY FROM MACHINERY AND CONSTRUCTION OPERATIONS, AND CARE MUST BE TAKEN TO PROTECT THE TOPSOIL AS A VALUABLE COMMODITY. TOPSOIL MUST NOT BE STRIPPED DURING UNDESIRABLE WORKING CONDITIONS (E.G. DURING WET WEATHER OR WHEN SOILS ARE SATURATED). TOPSOIL SHALL NOT BE STORED IN SWALES OR IN AREAS WITH POOR DRAINAGE.

SEEDING

1. ALLOWABLE SEED MIXES ARE INCLUDED IN THE CITY OF COLORADO SPRINGS STORMWATER CONSTRUCTION MANUAL. ALTERNATIVE SEED MIXES ARE ACCEPTABLE IF INCLUDED IN AN APPROVED LANDSCAPING PLAN.
2. SEED SHOULD BE DRILL–SEEDED WHENEVER POSSIBLE
   - SEED DEPTH MUST BE ½ TO ¾ INCHES WHEN DRILL–SEEDING IS USED
3. BROADCAST SEEDING OR HYDRO–SEEDING WITH TACKIFIER MAY BE SUBSTITUTED ON SLOPES STEEPER THAN 3:1 OR ON OTHER AREAS NOT PRACTICAL TO DRILL SEED.
   - SEEDING RATES MUST BE DOUBLED FOR BROADCAST SEEDING OR INCREASED BY 50% IF USING A BRILLION DRILL OR HYDRO–SEEDING
   - BROADCAST SEEDING MUST BE LIGHTLY HAND–RAKED INTO THE SOIL
4. THE CONTRACTOR SHALL CONFIRM WHICH SEED MIX TO USE WITH THE COUTNY PRIOR TO ORDERING OR ANY APPLICATION.

MULCHING

1. MULCHING SHOULD BE COMPLETED AS SOON AS PRACTICABLE AFTER SEEDING, HOWEVER PLANTED AREAS MUST BE MULCHED NO LATER THAN 14 DAYS AFTER PLANTING.
2. MULCHING REQUIREMENTS INCLUDE:
   - HAY OR STRAW MULCH
     - ONLY CERTIFIED WEED–FREE AND CERTIFIED SEED–FREE MULCH MAY BE USED. MULCH MUST BE APPLIED AT 2 TONS/ACRE AND ADEQUATELY SECURED BY CRIMPING AND/OR TACKIFIER.
     - CRIMPING MUST NOT BE USED ON SLOPES GREATER THAN 3:1 AND MULCH FIBERS MUST BE TUCKED INTO THE SOIL TO A DEPTH OF 3 TO 4 INCHES.
     - TACKIFIER MUST BE USED IN PLACE OF CRIMPING ON SLOPES STEEPER THAN 3:1.
   - HYDRAULIC MULCHING
     - HYDRAULIC MULCHING IS AN OPTION ON STEEP SLOPES OR WHERE ACCESS IS LIMITED.
     - IF HYDRO–SEEDING IS USED, MULCHING MUST BE APPLIED AS A SEPARATE, SECOND OPERATION.
     - WOOD CELLULOSE FIBERS MIXED WITH WATER MUST BE APPLIED AT A RATE OF 2,000 TO 2,500 POUNDS/ACRE, AND TACKIFIER MUST BE APPLIED AT A RATE OF 100 POUNDS/ACRE.
   - EROSION CONTROL BLANKET
     - EROSION CONTROL BLANKET MAY BE USED IN PLACE OF TRADITIONAL MULCHING METHODS.

SM

STORMWATER ENTERPRISE | SEEDING & MULCHING

APPROVED: SWENT MANAGER

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( MODIFIED AUGUST 2022)



**Table 5-1. El Paso County Conservation District All-Purpose Mix for Upland, Transition and Permanent Control Measure Areas**

| Common Name | Scientific Name | Growth Season / Form | % of Mix | Pounds PLS | | |
|---|---|---|---|---|---|---|
| | | | | • Irrigated broadcast • Irrigated hydroseeded | • Non-irrigated broadcast • Non-irrigated hydroseeded • Irrigated drilled | • Non-irrigated drilled |
| | | | | 80 seeds/sq ft | 40 seeds/sq ft | 20 seeds/sq ft |
| Bluestem, big | *Andropogon gerardii* | Warm, sod | 20 | 4.4 | 2.2 | 1.1 |
| Grama, blue | *Bouteloua gracilis* | Warm, bunch | 10 | 0.5 | 0.25 | 0.13 |
| Green needlegrass[2] | *Nassella viridula* | Cool, bunch | 10 | 2 | 1 | 0.5 |
| Wheatgrass, western[2] | *Pascopyrum smithii* | Cool, sod | 20 | 6.4 | 3.2 | 1.6 |
| Grama, sideoats | *Bouteloua curtipendula* | Warm, bunch | 10 | 2 | 1 | 0.5 |
| Switchgrass[2] | *Panicum virgatum* | Warm, bunch/sod | 10 | 0.8 | 0.4 | 0.2 |
| Prairie sandreed | *Calimovilfa longifolia* | Warm, sod | 10 | 1.2 | 0.6 | 0.3 |
| Yellow indiangrass[2] | *Sorghastrum nutans* | Warm, sod | 10 | 2 | 1 | 0.5 |
| | | | Seed rate (lbs PLS/acre) | 19.3 | 9.7 | 4.8 |

[1]For portions of facilities located near or on the bottom or where wet soil conditions occur. Planting of potted nursery stock wetland plants 2-foot on-center is recommended for sites with wetland hydrology.

[2]Species that will do well in the bottom of pond areas.





**Table 5-2. El Paso County All-Purpose Low Grow Mix for Upland and Transition Areas**

| Common Name | Scientific Name | Growth Season / Form | % of Mix | Pounds PLS | | |
|---|---|---|---|---|---|---|
| | | | | • Irrigated broadcast • Irrigated hydroseeded | • Non-irrigated broadcast • Non-irrigated hydroseeded • Irrigated drilled | • Non-irrigated drilled |
| | | | | 80 seeds/sq ft | 40 seeds/sq ft | 20 seeds/sq ft |
| Buffalograss | *Buchloe dactyloides* | Warm, sod | 25 | 9.6 | 4.8 | 2.4 |
| Grama, blue | *Bouteloua gracilis* | Warm, bunch | 20 | 10.8 | 5.4 | 2.7 |
| Grama, sideoats | *Bouteloua curtipendula* | Warm, bunch | 29 | 5.6 | 2.8 | 1.4 |
| Green needlegrass | *Nassella viridula* | Cool, bunch | 5 | 3.2 | 1.6 | 0.8 |
| Wheatgrass, western | *Pascopyrum smithii* | Cool, sod | 20 | 12 | 6 | 3 |
| Dropseed, sand | *Sporobolus cryptandrus* | Warm, bunch | 1 | 0.8 | 0.4 | 0.2 |
| | | | Seed rate (lbs PLS/acre) | 42 | 21 | 10.3 |



# Wind Erosion/Dust Control (DC) EC-14

## Description

Wind erosion and dust control BMPs help to keep soil particles from entering the air as a result of land disturbing construction activities. These BMPs include a variety of practices generally focused on either graded disturbed areas or construction roadways. For graded areas, practices such as seeding and mulching, use of soil binders, site watering, or other practices that provide prompt surface cover should be used. For construction roadways, road watering and stabilized surfaces should be considered.

**Photograph DC-1.** Water truck used for dust suppression. Photo courtesy of Douglas County.

## Appropriate Uses

Dust control measures should be used on any site where dust poses a problem to air quality. Dust control is important to control for the health of construction workers and surrounding waterbodies.

## Design and Installation

The following construction BMPs can be used for dust control:

- An irrigation/sprinkler system can be used to wet the top layer of disturbed soil to help keep dry soil particles from becoming airborne.
- Seeding and mulching can be used to stabilize disturbed surfaces and reduce dust emissions.
- Protecting existing vegetation can help to slow wind velocities across the ground surface, thereby limiting the likelihood of soil particles to become airborne.
- Spray-on soil binders form a bond between soil particles keeping them grounded. Chemical treatments may require additional permitting requirements. Potential impacts to surrounding waterways and habitat must be considered prior to use.
- Placing rock on construction roadways and entrances will help keep dust to a minimum across the construction site.
- Wind fences can be installed on site to reduce wind speeds. Install fences perpendicular to the prevailing wind direction for maximum effectiveness.

**Wind Erosion Control/ Dust Control**

| Functions | |
|---|---|
| Erosion Control | Yes |
| Sediment Control | No |
| Site/Material Management | Moderate |

## Maintenance and Removal

When using an irrigation/sprinkler control system to aid in dust control, be careful not to overwater. Overwatering will cause construction vehicles to track mud off-site.



# Street Sweeping and Vacuuming (SS) SM-7

## Description

Street sweeping and vacuuming remove sediment that has been tracked onto roadways to reduce sediment transport into storm drain systems or a surface waterway.

## Appropriate Uses

Use this practice at construction sites where vehicles may track sediment offsite onto paved roadways.

**Photograph SS-1.** A street sweeper removes sediment and potential pollutants along the curb line at a construction site. Photo courtesy of Tom Gore.

## Design and Installation

Street sweeping or vacuuming should be conducted when there is noticeable sediment accumulation on roadways adjacent to the construction site. Typically, this will be concentrated at the entrance/exit to the construction site. Well-maintained stabilized construction entrances, vehicle tracking controls and tire wash facilities can help reduce the necessary frequency of street sweeping and vacuuming.

On smaller construction sites, street sweeping can be conducted manually using a shovel and broom. Never wash accumulated sediment on roadways into storm drains.

## Maintenance and Removal

- Inspect paved roads around the perimeter of the construction site on a daily basis and more frequently, as needed. Remove accumulated sediment, as needed.
- Following street sweeping, check inlet protection that may have been displaced during street sweeping.
- Inspect area to be swept for materials that may be hazardous prior to beginning sweeping operations.

**Street Sweeping/ Vacuuming**

| Functions | |
|---|---|
| Erosion Control | No |
| Sediment Control | Yes |
| Site/Material Management | Yes |



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8 / 10 / 22

STERLING DESIGN ASSOCIATES, LLC

ISSUES & REVISIONS
NO.: 1 DATE: BY:
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SCALE: N/A
PROJECT MANAGER: JS
PROJECT NO.:
DRAWN BY: JN
DRAWING FILE:

PROJECT:

**SPACE VILLAGE FILING NO. 4**
**EL PASO COUNTY, CO**

CLIENT:

COMMERCIAL BUILDING SERVICES
7561 S. GRANT STR., SUITE A-4
LITTLETON, COLORADO 80122

TEL: (303) 730-3001

SHEET TITLE:

**GRADING & EROSION CONTROL DETAILS (SWMP-SITE MAP)**

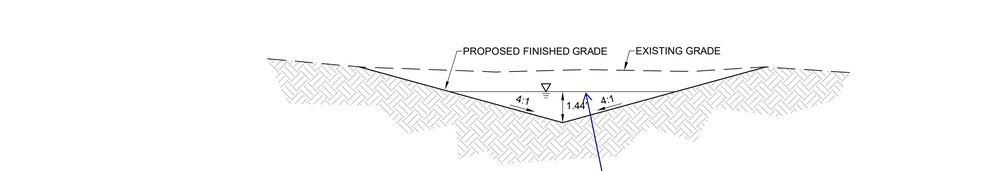
SHEET NUMBER:

**6** **C912**

DIVERSION SWALE (A)
NOT TO SCALE

provide top width distance

Revised.

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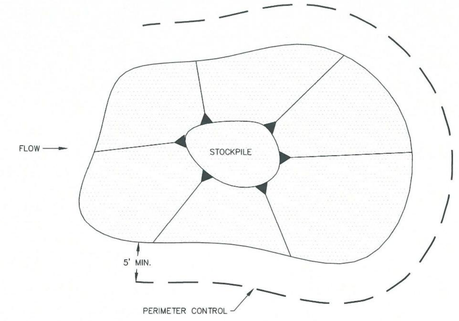
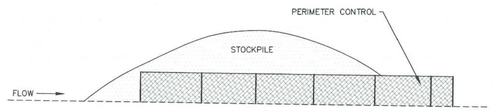



STOCKPILE PROTECTION PLAN




STOCKPILE PROTECTION ELEVATION

INSTALLATION NOTES

1. INSTALL PERIMETER CONTROL AROUND STOCKPILE ON DOWNGRADIENT SIDE. PERIMETER CONTROL MUST BE SUITABLE TO SITE CONDITIONS AND INSTALLED ACCORDING TO THE RELEVANT DETAIL.
2. FOR STOCKPILES ON THE INTERIOR PORTION OF A CONSTRUCTION SITE, WHERE OTHER DOWNGRADIENT CONTROLS INCLUDING PERIMETER CONTROL ARE IN PLACE, STOCKPILE PERIMETER CONTROLS MAY NOT BE REQUIRED.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. IF PERIMETER CONTROLS MUST BE MOVED TO ACCESS STOCKPILE, REPLACE PERIMETER CONTROLS BY THE END OF THE WORK DAY.
3. ACCUMULATED SEDIMENT MUST BE REMOVED ACCORDING TO PERIMETER CONTROL DETAIL.

SP

STORMWATER ENTERPRISE

STOCKPILE PROTECTION

APPROVED: SWENT MANAGER

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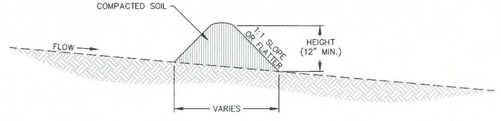


TEMPORARY COMPACTED BERM

INSTALLATION NOTES

1. COMPACTED BERM MUST BE A MINIMUM HEIGHT OF ONE FOOT. BASE WIDTH IS DETERMINED BY HEIGHT.
2. COMPACTED BERMS MUST BE ADEQUATELY COMPACTED. NOT ALL SOILS ARE SUITABLE FOR COMPACTED BERMS.
3. INSTALL COMPACTED BERMS ALONG CONTOUR; DO NOT INSTALL PERPENDICULAR TO SLOPE.
4. THE MAXIMUM TRIBUTARY DRAINAGE AREA PER 100 LINEAR FEET OF COMPACTED BERMS SHALL BE ¼ ACRE.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES ½ OF THE DESIGN DEPTH OF THE BERM.

TCB

STORMWATER ENTERPRISE

TEMPORARY COMPACTED BERM

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ISSUES & REVISIONS

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**7** **C913**